



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**Request for  
 Quotation**

RFQ NUMBER  
 DNR211012

PAGE  
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF:  
 FRANK WHITTAKER  
 304-558-2316

VENDOR

\*703123155 01 412-818-9241  
 ADVANCED TURF SOLUTIONS INC  
 12840 FORD DRIVE  
 FISHERS IN 46038

SHIP TO

DIVISION OF NATURAL RESOURCES  
 PIPESTEM STATE PARK  
 ATTN: PARK SUPERINTENDENT  
 STATE ROUTE 20  
 PIPESTEM, WV  
 25979 304-466-2804

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
08/24/2010				

BID OPENING DATE: 09/15/2010 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		988-05		
<p>GOLF COURSE CHEMICALS</p> <p>THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF NATURAL RESOURCES IS SOLICITING BIDS FOR GOLF COURSE CHEMICALS PER THE ATTACHED SPECIFICATIONS.</p> <p>ALL TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO FRANK WHITTAKER IN THE WV PURCHASING DIVISION VIA EMAIL AT FRANK.M.WHITTAKER@WV.GOV OR VIA FAX AT 304-558-4115. DEADLINE FOR TECHNICAL QUESTIONS IS 08/31/10 AT 4:00 PM ALL TECHNICAL QUESTIONS WILL BE ADDRESSED BY ADDENDUM AFTER THE DEADLINE.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p style="text-align: center;">NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p style="margin-left: 40px;">DEPARTMENT OF ADMINISTRATION          PURCHASING DIVISION          BUILDING 15          2019 WASHINGTON STREET, EAST          CHARLESTON, WV 25305-0130</p>						

RECEIVED  
 2010 SEP 14 A 10:48  
 PURCHASING DIVISION  
 STATE OF WV

Early  
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 ng Division,  
 2/15/09

SEE REVERSE SIDE FOR TERMS AND CONDITIONS	
TELEPHONE	DATE

FEIN ADDRESS CHANGES TO BE NOTED ABOVE

ENDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



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LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:  SEALED BID  BUYER: 44 RFQ. NO.: DNR211012 BID OPENING DATE: 09/15/2010 BID OPENING TIME: 1:30 PM  PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: ----- 304-845-0587 ----- CONTACT PERSON (PLEASE PRINT CLEARLY): ----- PAUL TALLAFERRA -----  ***** THIS IS THE END OF RFQ DNR211012 ***** TOTAL: _____						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE: *Paul Talfer* TELEPHONE: 412-818-9241 DATE: 9-13-10

TITLE: TURF CONSULTANT FEIN: 35-215-2001 ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

Item No.	Quantity	Description	Unit Price	Amount
1	6 cases	Bayleton 50 water soluble packets, active ingredient 1-(4-Chlorophenoxy)-3, 3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone, sixteen 55 gram packets per case or equal.	No Bid!	No Bid!
2	2 X 2.564L CASE 30 gal.	Bensumec, 4LF, (2 - 2 1/2 gallon per case) Active ingredient Bensulide; S-(0, 0-Disopropyl Phosphorodithioate) ester of N-(2-Mercaptoethyl) Benzenesulfonamide 46% inert ingredient 54% or equal.	\$ 559.00 / CASE	\$ 3354.00
3	22 bags	Anderson's fungicide IX, active ingredient chlorobeb 3.2% snow mold control granular Thiophanate methyl 1.63%, 44.7# bag or equal.	\$ 78.35	\$ 1723.70
4	10 cases	S-(O, O-Diisopropyl Phosphorodithioate) ester of N-(2-Mercaptoethyl) Benzenesulfonamide 46% inert ingredient .54, or equal. <b>DACONIL ULTREX (AT 825 DF)</b>	\$ 130.00	\$ 1300.00
5	(2 X 2.564L CASE) 20 gallons	Daconil ZN Flowable fungicide, active ingredient Chlorothalnil (Tetrachloroisophthalonitrile) 30.5% inert ingredient 61.5%. Made and sold by Zeneca Professional Products or equal.	\$ 220.00 / CASE	\$ 880.00
6	ANDERSON'S 24-0-6 50% NSN 400 bags	18-5-9 Lebanon Country Club medium granular, 7.3% ammoniacal nitrogen, 5.5% water insoluble nitrogen, 5.2% water soluble nitrogen source, ammoniacal phosphate, ammoniacal sulfate of potash, 1% magnesium, 0.2% water soluble magnesium, 6% sulphur, 1% iron total, 0.5% manganese, 0.1% water soluble manganese, 50 lb bags or equal. (24-0-6)	\$ 13.00 / BAG	\$ 5200.00
7	6 cases	Cleary 3336 WP all water soluble foil packs, 6 x 2 lb, 50% Thiophanate methyl or equal.	No Bid!	No Bid!
8	(2 X 1.64L CASE) 6 gallons	Banner Maxx, Sygenta, active ingredient Propiconazole 14.3%, 1[[2-(2,4-dichlorophenyl)-4-propyl-1,3 dioxolan-2-yl]methyl]-1H-1, 2, 4-triazole or equal. (AT PR 7143) (2 X 1.64L CASE)	\$ 257.00 / CASE	\$ 771.00
9	SIGNAL BLUE 10 cases	Blazon blue spray pattern indicator, liquid form in water soluble packets, 48 water soluble packets per case or equal. (SIGNAL)	\$ 210.00	\$ 2100.00
10	RADIUS 20 gallons	Primer 604 matrix flow soil surfactant, active ingredient Polymeric Poloxyalkylenes 95%, inert ingredient 5% Oxoalkenyl Hydroxy Polyoxyalkanadiyl or equal. RADIUS (2 X 2.564L)	\$ 240.70	\$ 962.80
11	12 cases	PENTATHLON DF Fore, Rain Shield, active ingredient Mancozeb, 8 x 6# or equal.	\$ 251.60	\$ 3019.20
<b>TOTAL</b>				

All items are to be F.O.B. Destination. Freight or delivery charges must be included in the price of the line item cost.

# QUALI-PRO™

## Chlorothalonil 500 ZN

FLOWABLE

<b>ACTIVE INGREDIENTS:</b>	<b>BY WEIGHT</b>
Chlorothalonil (tetrachloroisophthalonitrile) . . . . .	38.5%
INERT INGREDIENTS . . . . .	61.5%
TOTAL . . . . .	100.0%

Contains 4.17 Pounds of Active Ingredient per Gallon (500 grams per liter).

EPA REG. NO. 72167-27-73220      EPA EST. NO. 37429-GA-1

### KEEP OUT OF REACH OF CHILDREN WARNING – AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
<b>IF IN EYES</b>	Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. <b>For medical emergencies involving this product, call 1-800-308-5391.</b>	
NOTE TO PHYSICIAN	
Persons having temporary irritation may respond to treatment with antihistamines or steroid creams and/or systemic steroids.	

See inside booklet for complete Precautionary Statements, Directions for Use, and Conditions of Sale and Warranty.

FarmSaver.com, LLC • P.O. Box 21365 • Seattle, WA 98111

**Net Contents: 2.5 Gallons • 9.48 Liters**

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS WARNING-AVISO

Causes eye irritation. May cause skin irritation. May be a potential skin sensitizer. Do not get into eyes. Avoid prolonged contact with skin. Avoid breathing spray mist. Do not take internally.

**Note to user:** This product may produce temporary allergic side effects characterized by redness of the eyes, mild bronchial irritation and redness or rash on exposed skin areas. Persons having allergic reactions should contact a physician.

#### Personal Protective Equipment

Some materials that are chemical-resistant to this product are listed below. If you want more

options, follow the instructions for category A on an EPA chemical resistance category selection chart.

For WPS or non-WPS applications made in enclosed areas, such as greenhouses, applicators and other handlers must wear a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH-approved respirator with any N, R, P, or HE filter.

**WPS Uses** (commercial production on farms, forests, nurseries, sodfarms, and in greenhouses):  
Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear

**Non-WPS Uses** (such as applications to non-residential turf, golf courses, public parks, etc.):  
Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### Engineering Control Statements

When handlers use enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS
<p>Users should:</p> <ul style="list-style-type: none"> <li>• Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.</li> <li>• Remove PPE immediately after handling this product.</li> <li>• Wash outside of gloves before removing.</li> <li>• As soon as possible, wash thoroughly and change into clean clothing.</li> <li>• Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.</li> </ul>

#### ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates and wildlife. Do not apply directly water or to areas where surface water is present or to intertidal areas below the mean high-water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

This chemical can contaminate surface water through spray drift. Under some conditions, it may also have a high potential for runoff

# Chlorothalonil 500 ZN

# Specimen Label

into surface water for several days to weeks after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with infield canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers, other persons or pets, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear

**Special Eye Irritation Provisions:** This product is a severe eye irritant. Although the restricted entry interval expires after 12 hours, for the next 6.5 days, entry is permitted only when the following safety measures are provided:

1. At least one container designed specifically for flushing eyes must be available in operating condition at the WPS-required decontamination site intended for workers entering the treated area.

2. Workers must be informed, in a manner they can understand:

- That residues in the treated area may be highly irritating to their eyes,
- That they should take precautions, such as refraining from rubbing their eyes, to keep residues out of their eyes,
- That if they do get residues in their eyes, they should immediately flush their eyes using the eyeflush container that is located at the decontamination site or using other readily available clean water, and
- How to operate the eyeflush container.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for Agricultural pesticides, 40 CFR part 170.

The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow others to enter the treated area until sprays have dried.

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

**PESTICIDE STORAGE:** Store in cool place. Protect from excessive heat. Store product in original container only, away from water, food or feed.

**PESTICIDE DISPOSAL:** Improper disposal of excess pesticide, pesticide spray, or rinsate is a violation of Federal law. Pesticide wastes are toxic. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. If wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Do not reuse empty container. Triple rinse or equivalent, then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

FarmSaver.com will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by FarmSaver.com. User assumes all risks associated with such nonrecommended use.

## APPLICATION INSTRUCTIONS

Chlorothalonil 500 ZN, a flowable product containing chlorothalonil, is recommended for use as a spray for the control of many important plant diseases.

Chlorothalonil 500 ZN is effective for use in programs that attempt to minimize disease resistance to fungicides. Chlorothalonil 500 ZN has a multi-site mode of action and may be used to delay or prevent the development of resistance to single-site fungicides. Consult with your Federal or State Cooperative Extension Service representatives for guidance on the proper use of Chlorothalonil 500 ZN in programs that seek to minimize the occurrence of disease resistance to other fungicides.

## GENERAL PRECAUTIONS

Chlorothalonil 500 ZN can be used effectively in dilute or concentrate sprays. Thorough, uniform coverage is essential for disease control.

Do not combine Chlorothalonil 500 ZN in a spray tank with pesticides, surfactants, or fertilizers, unless your prior use has shown the combination to be physically compatible, effective, and noninjurious under your conditions of use. Do NOT combine Chlorothalonil 500 ZN with DiPel 4L, Foil®, Triton AG-98, Triton B-1956, or Latron B-1956 as phytotoxicity may result from the combination when applied to crops listed on this label.

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**Note:** Prior to pouring, slowly invert container several times to assure uniform mixture.

The required amount of Chlorothalonil 500 ZN should be added slowly into the spray tank during filling. With concentrate sprays, premix the required amount of Chlorothalonil 500 ZN in a clean container and add to the spray tank as it is being filled. Keep agitator running when filling spray tank and during spray operations.

Dosage rates on this label indicate pints of Chlorothalonil 500 ZN per acre, unless specified otherwise. Under conditions favoring disease development, the high rate specified and shortest application interval should be used.

## APPLICATION PRECAUTIONS AND REQUIREMENTS

This product must not be applied within 150 feet, for aerial and air-blast applications, or 25 feet, for ground applications, of marine/estuarine water bodies unless that there is an untreated buffer area of that width between the area to be treated and the water body.

## SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Excluding helicopters, nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

### Aerial Drift Reduction Advisory Information:

**INFORMATION ON DROPLET SIZE:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable conditions (see Wind, Temperature).

### CONTROLLING DROPLET SIZE - General Techniques

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

### CONTROLLING DROPLET SIZE – Aircraft

- **Number of nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift potential.

**BOOM HEIGHT:** Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

**BOOM LENGTH:** For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

**WIND:** Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**TEMPERATURE AND HUMIDITY:** When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**TEMPERATURE INVERSIONS:** Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**SHIELDED SPRAYERS:** Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

**AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS:** Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring. **NOTE:** Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration.

**AIR ASSISTED (AIR BLAST) TREE AND VINE SPRAYERS:** Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radially or laterally directed air stream. In

# Chlorothalonil 500 ZN

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In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy.
- Block off upward pointed nozzles when there is no overhanging canopy.
- Use only enough air volume to penetrate the canopy and provide good coverage.
- Do not allow spray to go beyond the edge of the cultivated area. Spray the outside row only from outside the planting.

## RESTRICTIONS

### Foliar Applications

## CHEMIGATION

Apply this product only through center pivot, motorized lateral move, traveling gun, solid set, and portable (wheel move, side roll, end tow, or hand moved) irrigation system(s). Do not apply this product through any other type of irrigation system. Use only on crops specifically designated in the "DIRECTIONS FOR USE."

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service Specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse system) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

### Specific Instructions for Public Water Systems:

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Always inject Chlorothalonil 500 ZN into irrigation after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides on the intake line on the suction side of the pump.
8. Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur.
9. Do not apply when wind speed favors drift beyond the area intended for treatment.

### Specific Instructions for Sprinkler Irrigation Systems:

Chlorothalonil 500 ZN may be used through 2 basic types of sprinkler irrigation systems as outlined in Sections A and B. Determine which type of system is in place, then refer to the appropriate directions provided for each type.

1. The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

### A. Center Pivot, Motorized Lateral Move, and Traveling Gun Irrigation Equipment

For injection of pesticides, these continuously moving systems must use a positive displacement injection pump, of either diaphragm or piston type, constructed of materials that are compatible with

# Chlorothalonil 500 ZN

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pesticides and capable of being fitted with a system interlock and capable of injection at pressures approximately 2 to 3 times those encountered within the irrigation water line. Venturi application units cannot be used on these systems.

Fill chemical supply tank of injection equipment with water. Operate system for one complete revolution or run across the field, measuring time required, amount of water injected, and acreage covered. Thoroughly mix recommended amount of Chlorothalonil 500 ZN for acreage to be covered into same amount of water used during calibration and inject into system continuously for 1 revolution or run. Mixture in the chemical supply tank must be continuously agitated during the injection run. Shut off injection equipment after 1 revolution or run, but continue to operate irrigation system until Chlorothalonil 500 ZN has been cleared from last sprinkler head.

B. Solid Set and Portable (Wheel Move, Side Roll, End Tow, or Hand Move) Irrigation Equipment

With stationary systems, an effectively designed in-line venturi applicator unit is preferred which is constructed of materials that are compatible with pesticides; however, a positive-displacement pump can also be used.

Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a 30- to 45-minute period. Mix desired amount of Chlorothalonil 500 ZN for acreage to be covered with water so that the total mixture of Chlorothalonil 500 ZN plus water in the injection tank is equal to the quantity of water used during calibration, and operate entire system at normal pressures recommended by the manufacturer of injection

equipment used for amount of time established during calibration. No agitation should be required. Chlorothalonil 500 ZN can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until Chlorothalonil 500 ZN has been cleared from last sprinkler head.

**Do not use on greenhouse grown food crops.**

**Restrictions on use of treated vegetation:**

- **Do not** allow grazing in treated areas or feed treated plant parts to livestock.
- **Do not** feed hay or threshings from treated fields.
- **Do not** feed vines or processing by-products from treated areas to livestock.

## FIELD AND ROW CROPS

AS A SPRAY (Ground or Aerial Equipment) - Apply Chlorothalonil 500 ZN at the rate shown; use sufficient water to provide thorough coverage. Gallonage will vary with crop and amount of plant growth. Spray volume usually will range between 20 to 150 gallons per acre (200 to 1,400 liters per hectare) for dilute sprays and 5 to 10 gals per acre (50 to 100 liters per hectare) for concentrate ground sprays and aircraft applications. Both ground and aircraft methods of application are recommended unless specific directions are given for a crop. Application through sprinkler irrigation systems is not recommended unless specific directions are given for a crop. See the following instructions for application and calibration.

CROP	DISEASES CONTROLLED	RATE OF Chlorothalonil 500 ZN PER APPLICATION PINTS/ACRE	SEASONAL LIMITS (PINTS/ACRE/ YEAR)	APPLICATION DIRECTIONS
GRASSES GROWN FOR SEED	Stern Rust Leaf Rust Stripe Rust Septoria Leaf Spot Glume Blotch Bipolaris and Dreschlera Leaf Spot	1.4-2.1	8.6	Use in sufficient water to obtain adequate coverage. Begin applications during stem elongation when conditions favor disease development. Reapply at flag (top) leaf emergence and repeat applications at 14-day intervals. DO NOT apply within 14 days of harvest. Do not allow livestock to graze on treated areas. Do not use treated clippings, straw, seed, or seed screenings for feed.
	Selenophoma (Eyespot)	1.4-2.8		

## TREE CROPS APPLICATION INSTRUCTIONS

Apply Chlorothalonil 500 ZN in sufficient water and with proper calibration to obtain uniform coverage of tree canopy. Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy. If application with ground equipment is not feasible, Chlorothalonil 500 ZN may be applied with aircraft using at least 20 gallons of spray per acre. When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Chlorothalonil 500 ZN listed may be used. DO NOT allow livestock to graze in treated areas. The following spray volumes are recommended as gallons of spray per acre:

CROP	SPRAY VOLUME (Gallons per Acre)	
Conifers: - Forest Stands - Christmas Trees - Nursery Beds	<b>Dilute</b>	<b>Concentrate</b>
	Not used	10 to 20 (aircraft)
	100	10 to 50 (aircraft or ground equipment)
	100	5 to 10 (ground equipment only)



# Chlorothalonil 500 ZN

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CROP	DISEASES	CHLOROTHALONIL 500 ZN RATE PINTS/ACRE	CHLOROTHALONIL 500 ZN RATE PINTS/100 GAL- LONS*	SEASONAL LIMIT PINTS/ ACRE	APPLICATION DIRECTIONS
CONIFERS Pine Spruce	Swiss Needlecast	4.0 to 7.9	4.0 to 7.9	31.6	Single-application technique: In Christmas tree plantations or forest stands, make 1 application in the spring when new shoot growth is 1/2 to 2 inches in length.
	Sclerotinia Canker (Pines) Swiss Needlecast	2.2 to 4.0	2.2 to 4.0		Make the first application in spring when new shoot growth is 1/2 to 2 inches in length. Make additional applications at 4-week intervals until conditions no longer favor disease development. For use in nursery beds, apply the highest rate specified on a 4-week schedule.
	Sirococcus Tip Blight	2.8 to 5.0	2.8 to 5.0		
	Rhizosphaera Needlecast (Spruces) Schirrhia Brown Spot (Pines)	7.9	7.9		
	Cyclaneusma and Lophodermium Needlecasts (Pines)	4.0 to 7.9	4.0 to 7.9		Apply in early spring prior to budbreak. Repeat applications at approximately 6- to 8-week intervals, until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended, then resumed upon next occurrence of needle wetness.
	Rhabdocline Needlecast (Douglas fir)	2.2 to 4.0	2.2 to 4.0		Apply at budbreak and repeat at 4-week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular budbreak occurs, apply weekly until all trees have broken bud, then every 4 weeks as specified above. In nursery beds, use the high rate on a 4-week schedule.
	Botrytis Seedling Blight Phoma Twig Blight	2.2 to 4.0	2.2 to 4.0		Begin applications in nursery beds when seedlings are 4 inches tall and when cool, moist conditions favor disease development. Make additional applications at 7- to 14-day intervals as long as disease favorable conditions persist.
	Autoecious Needle Rust (Weir's Cushion)	7.9	7.9		Begin applications when 10% of buds have broken and twice thereafter at 7- to 10-day intervals for seed beds.

\*Volumetric rates to be used only with full dilute spray volume specified on this label for tree crops.

## GRASSES: GOLF COURSE FAIRWAYS

For low disease pressure, follow the retreatment intervals and the application rates provided below.

For an extreme disease condition, a single maximum application of 21.6 pints per acre with a minimum retreatment interval of 7 days can be made each year. After making the 21.6 pint per acre application, the low disease regime must be followed for the remainder of the year.

For Chlorothalonil 500 ZN Flowable, no more than 49.8 pints/acre may be applied per year on fairways.

For reentry into treated areas, refer to the **Non-Agricultural Use Requirements** box.

Diseases Controlled	Low Disease Pressure Treatment Regime		Extreme Disease Condition		Maximum Application Rate per Year for Fairways (Pints/acre)
	Retreatment Interval (days)	Application Rate (Pints/acre)	Maximum Single Application Allowed in a Year (Pints/acre)	Minimum Retreatment Interval for the Maximum Single Application (days)	
Dollar spot	7 - 10	3.88 <sup>a</sup> - 7.2	21.6	7	49.8
	14 - 21	7.2 - 13.9			
Leaf Spot,	7 - 10	7.2			
Melting Out, Brown Blight	14 - 21	7.2 - 13.9			
Brown Patch	7 - 14	7.2 - 13.9			
Gray Leaf Spot	7 - 10	7.2 - 13.9			
Red Thread	7 - 10	7.2 - 13.9			
Anthracnose	7 - 14	11.6 - 13.9			

<sup>a</sup>Low rate is not effective on intensively mowed grasses.

Diseases are caused by some of the following fungi:

Dollar Spot: *Sclerotinia homeocarpa*, *Lanzia* or *Moellerodiscus* spp.

Leaf Spot, Melting out and Brown Blight: *Drechslera* spp., *Bipolaris* spp., *Curvularia* spp.

Brown Patch: *Rhizoctonia* spp.

Anthracnose: *Colletotrichum*.

## GRASSES: GOLF COURSE TEES, GREENS, AND ORNAMENTAL TURF USES

For low disease pressure, follow the retreatment intervals and the application rate provided below. For an extreme disease condition, a single maximum application of 21.6 pints per acre with a minimum retreatment interval of 7 days can be made. For Chlorothalonil 500 ZN Flowable, maximum yearly application limits exist for fairways, greens and other non-residential ornamental turf, such as municipal parks. For reentry after treatment, follow requirements outlined in the **Non-Agricultural Use Requirements** box.

Diseases Controlled	Retreatment Interval (days)	Application Rate (fl. oz. per 1000 sq. ft.)		Maximum Application Rate per Year for Ornamental Turf, Tees and Greens (Fl. oz. per 1000 sq. ft.)
		Low Disease Pressure Regime	High Disease Pressure Regime  Single Maximum Application (Fl. oz.) and Retreatment Interval (days)	
Dollar Spot	7 to 14	3.0 - 5	7.9 (14)	18.2 fl. oz. per 1000 sq. ft. (ornamental turf)
Brown Patch	7 to 14	3.0 - 5	7.9 (14)	
Leaf Spot, Melting Out	7 to 10	3.0 - 5	7.9 (14)	
Gray Leaf Spot	7 to 10	3.0 - 5	7.9 (14)	36.5 fl. oz. per 1000 sq. ft. (tees)
Red Thread	7 to 10	3.0 - 5	7.9 (14)	
Anthracnose	7 to 14	3.0 - 5	7.9 (14)	
Copper Spot	7 to 10	3.0 - 5	7.9 (14)	51.4 fl. oz. per 1000 sq. ft. (greens)
Stem Rust (Bluegrass)	7 to 14	3.0 - 5	7.9 (14)	
DICHONDRA: Leaf Spot (CALIFORNIA ONLY)	7 to 14	3.0 - 5	7.9 (14)	

Diseases are caused by some of the following fungi:

Dollar Spot: *Sclerotinia homeocarpa*, *Lanzia* or *Moellerodiscus* spp.

Brown Patch: *Rhizoctonia* spp.

Leaf Spot, Melting out and Brown Blight: *Drechslera* spp., *Bipolaris* spp., *Curvularia* spp.

Gray Leaf Spot: *Pyricularia* spp.

Red Thread: *Laetisaria fuciformis*.

Anthracnose: *Colletotrichum* spp.

Copper Spot: *Gloeocercospora* spp.

Stem Rust: *Puccinia* spp.

Dichondra Leaf Spot: *Alternaria* spp.

Gray snow mold caused by *Typhula* spp.: Apply in sufficient water to obtain adequate coverage (2.9 to 14.4 gallons per 1000 sq. ft.). Apply a single application of 7.9 fluid ounces of Chlorothalonil 500 ZN per 1000 sq. ft. of turf area. Application must be made before snow cover in autumn. If snow cover is intermittent or lacking during the winter, reapply at 7.9 fl. oz. per 1000 sq. ft. at monthly intervals until gray snow mold conditions no longer prevail. In areas where pink snow mold (*Gerlachia* or *Fusarium* patch) is likely to occur, apply Chlorothalonil 500 ZN at 7.9 fl. oz. in combination with products containing iprodione at 2 oz. active ingredient per 1000 sq. ft. of turf area. Read and observe all label directions for products containing this active ingredient. A maximum seasonal limit of 18.2 oz. per 1000 sq. ft. may be applied to ornamental turf, no more than 36.5 oz. per 1000 sq. ft. may be applied to tees, and a maximum seasonal amount of 51.4 oz. per 1000 sq. ft. of Chlorothalonil 500

ZN may be applied to greens.

*Fusarium* (Gerlachia) Patch: For control of *Fusarium* patch only in areas where snow cover is intermittent or lacking during the winter, apply 7.9 fl. oz. of Chlorothalonil 500 ZN per 1000 sq. ft. Begin applications in autumn and reapply at 21- to 28 day intervals until conditions favorable for *Fusarium* patch no longer prevail. A maximum seasonal limit of 18.2 oz. per 1000 sq. ft. may be applied to ornamental turf, no more than 36.5 oz. per 1000 sq. ft. may be applied to tees, and a maximum seasonal amount of 51.4 oz. per 1000 sq. ft. of Chlorothalonil 500 ZN may be applied to greens.

Algae: For prevention of algae on turfgrasses, apply Chlorothalonil 500 ZN at the rate of 3 to 7.9 fl. oz. per 1000 sq. ft. on a 7 to 14 day schedule. When algae is well-established, every attempt should be

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made to dry out the afflicted area. Once dry, spiking or verticutting should be done to enhance turfgrass recovery in conjunction with Chlorothalonil 500 ZN applications. Several applications may be necessary for turfgrass recovery. Only a preventive spray program with Chlorothalonil 500 ZN will prevent a recurrence of the algae when environmental conditions are favorable for algal growth. A maximum seasonal limit of 18.2 oz. per 1000 sq. ft. may be applied to ornamental turf, no more than 36.5 oz. per 1000 sq. ft. may be applied to tees, and a maximum seasonal amount of 51.4 oz. per 1000 sq. ft. of Chlorothalonil 500 ZN may be applied to greens.

### GRASS: SODFARMS

Use of this product on home lawns is prohibited.

Apply Chlorothalonil 500 ZN in 30 to 40 gallons of water per acre. Begin applications when conditions favor disease development and

repeat applications as long as these conditions persist using the rates recommended in the following table.

Under severe disease conditions, a single application of 21.6 pints per acre may be made with a 7 day retreatment interval. Subsequent applications must follow the rates and retreatment intervals outlined in the following table for the remainder of the year.

Do not mow or water after treatment until spray deposited on grass is thoroughly dry. Chlorothalonil 500 ZN should always be used in conjunction with good turf management practices.

Sodfarm turf treated with chlorothalonil prior to harvest must be mechanically cut, rolled, and harvested. Follow all provisions outlined in the **Agricultural Use Requirements** box.

Diseases Controlled	Low Disease Pressure Treatment Regime		Extreme Disease Condition		Application Limit per Year for Sodfarms (Pints/acre)
	Retreatment Interval (days)	Application Rate (Pints/acre)	Maximum Single Application Allowed in a Year (Pints/acre)	Minimum Retreatment Interval for the Maximum Single Application (days)	
Dollar spot	7 - 10	3.88 <sup>a</sup> - 7.2	21.6	7	49.8
	14 - 21	7.2 - 13.9			
Leaf Spot, Melting Out, Brown Blight	7 - 10	7.2			
	14 - 21	7.2 - 13.9			
Brown Patch	7 - 14	7.2 - 13.9			
Gray Leaf Spot	7 - 10	7.2 - 13.9			
Red Thread	7 - 10	7.2 - 13.9			
Anthracnose	7 - 14	11.6 - 13.9			

<sup>a</sup>Low rate is not effective on intensively mowed grasses.

Diseases are caused by some of the following fungi:

Dollar Spot: *Sclerotinia homeocarpa*, *Lanzia* or *Moellerodiscus spp.*

Leaf Spot, Melting out and Brown Blight: *Drechslera spp.*, *Bipolaris spp.*, *Curvularia spp.*

Brown Patch: *Rhizoctonia spp.*

Anthracnose: *Colletotrichum*.

### ORNAMENTAL PLANTS

Chlorothalonil 500 ZN Flowable may be used on ornamental plants grown in the field, nurseries, greenhouses and for spot-treatment of ornamentals plants growing in landscapes. Due to the large number of species and varieties of ornamental and nursery plants, and the widely varying growing conditions, it is impossible to test every one for sensitivity to Chlorothalonil 500 ZN Flowable. Prior to

commercial use, apply the recommended rates to a small area of plants in question, i.e. bedding plants, foliage, etc., and observe for 7 to 10 days prior to treatment of a commercial crop.

#### Field-grown ornamentals:

No more than 69.1 pints per acre of Chlorothalonil 500 ZN may be applied to field-grown ornamentals per year.

For aerial application to field-planted ornamentals, a minimum rate of 10 gals of spray per acre should be used during application. Chlorothalonil 500 ZN should be applied to plants when both foliage and flowers are dry or nearly dry.

For field-grown roses, apply 2 pints of Chlorothalonil 500 ZN per acre for a single application. For field-planted pachysandra, apply 5.9 pints per acre of Chlorothalonil 500 ZN for a single application.

## Ornamentals grown in nurseries, greenhouses:

DO NOT use mistblowers or high pressure spray equipment when making applications of Chlorothalonil 500 ZN Flowable in greenhouses.

Apply Chlorothalonil 500 ZN Flowable at a rate of 1.9 pints per 100 gallons of water unless other directions are given in tables below. Apply in a spray until foliage run-off occurs when conditions are favorable for disease development. Repeat applications at 7- to 14-day intervals until conditions are no longer favorable. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, apply Chlorothalonil 500 ZN at 7 day intervals. Chlorothalonil 500 ZN should be applied to plants when both foliage and flowers are dry or nearly dry.

Do NOT combine Chlorothalonil 500 ZN Flowable in the spray tank with pesticides, surfactants or fertilizers unless prior use has shown the combination to be physically compatible, effective and noninjurious under your conditions of use.

## Spot-treatment of ornamental plants growing in landscapes:

Apply Chlorothalonil 500 ZN Flowable at a rate of 1.9 teaspoons per 2 gallons of water. Apply in a spray until foliage run-off occurs when conditions are favorable for disease development. Repeat applications at 7- to 14-day intervals until conditions are no longer favorable. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, apply Chlorothalonil 500 ZN at 7 day intervals. Chlorothalonil 500 ZN should be applied to plants when both foliage and flowers are dry or nearly dry.

Use of Chlorothalonil 500 ZN Flowable is recommended for control of fungal diseases referred to by numbers in parentheses following each ornamental. Ornamentals listed on this label have been tested and found to tolerate applications of Chlorothalonil 500 ZN at the recommended rates. The user should test for possible phytotoxic responses, using recommended rates on ornamental plants on a small area prior to commercial treatments. Applications made during bloom may damage flowers and/or fruits.

**NOTE:** Fruits and other treated foliage must not be eaten or fed to livestock.

## Diseases controlled by Chlorothalonil 500 ZN Flowable:

### 1. Leafspots/Foliar Blights:

Actinopelte leaf spot  
Alternaria leafspot/leaf blight  
Anthracnose-leaf blotch, spot  
Anthracnose- (Discula) blight  
Ascochyta blight  
Bipolaris (Helminthosporium) leaf spot  
Botrytis leaf spot, leaf blight  
Cephalosporium leafspot  
Cercospora leafspot  
Cercosporidium leafspot  
Coryneum blight (shothole)  
Corynespora leafspot  
Curvularia leafspot  
Cylindrosporium leafspot  
Dactylaria leafspot  
Didymellina leafspot  
Dreschlera leafspot  
Fabraea (Entomosporium) leafspot  
Fusarium leafspot  
Gloesporium black leafspot  
Inkspot (Dreschlera)  
Marssonina leafspot

Monilinia blossom blight, twig blight  
Mycosphaerella ray blight  
Mycothecium leafspot, brown rot  
Nematostoma leaf blight  
Phyllosticta leafspot  
Rhizoctonia web blight  
Ramularia leafspot  
Septoria leafspot  
Sphaeropsis leafspot  
Stagonospora leaf scorch  
Tan leafspot (Curvularia)  
Volutella leaf blight

### 2. Flower spots/blights:

Botrytis flower spot, flower blight  
Curvularia flower spot, flower blight  
Monilinia blossom blight  
Ovulinia flower blight  
Rhizopus blossom blight  
Sclerotinia flower blight

### 3. Cylindrocladium stem canker

### 4. Phytophthora leaf blight, dieback

### 5. Powdery mildews:

Erysiphe cichoracearum  
Microsphaera spp.

### 6. Rusts:

Gymnosporangium spp.  
Puccinia spp.  
Pucciniastrum hydrangeae

### 7. Taphrina blister

### 8. Scab:

Ventura inaequalis

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Ornamentals recommended for treatment with Chlorothalonil 500 ZN Flowable:

Avoid applications during bloom periods for those plants where flower injury is unacceptable.

For poinsettia, discontinue applications prior to bract formation; phytotoxicity is possible on bracts. For roses, use 1.6 pints per 100 gallons of water.

Plant	Disease(s)	Comments/Instructions:
Aglaonema	1	
Andromeda (Pieris)	4	
Arabian Violet	2	
Areca palm	1	
Artemesia	1	
Ash, Fraxinus	1	
Aspen	1	
Azalea	1,2,4	
Begonia	1	
Boston fern	1	
Buckeye, Horsechestnut	1	
Camellia	2	
Carnation	1,2	
Cherry-laurel	1	
Chrysanthemum	1,2	
Crabapple	1,6,8	
Crocus	1	
Daffodil	1	
Daisy	1	
Daylily	6	
Dogwood	1	
Dumbcane, Dieffenbachia	1	
Dracaena	1	
Eucalyptus	3	
Euonymus	1	
Fatsia (Aralia)	1	
Ficus	1	
Firethorn, Pyracantha	1	
Florida Ruffle Fern	1	
Flowering Almond	1,2	
Flowering Cherry	1,2	
Flowering Peach	1,2	
Flowering Plum	1,2	
Flowering Quince	1,2	
Geranium	1,6	
Gladiolus	1,2	
Hawthorn	1,6	
Holly	1	
Hollyhock	6	
Hydrangea (foliage only)	1,6	
Iris	1,2	
Leatherleaf Fern	1	
Lilac	5	
Lily	1	
Lipstick plant	1	
Magnolia	1	
Maple	1	
Marigold	1	
Ming aralia	1	
Mountain Laurel	1	
Narcissus	1	
Oak (red group only)	1,7	
Oregon Grape (Mahonia)	6	
Oyster plant (Rhoeoe)	1	
Pachysandra	1	
Pansy	1	
Parlor palm (Chamaedorea)	1	
Peperomia	1	
Petunia	1,4	
Philodendron	1,4	

Use 4.3 pints of Chlorothalonil 500 ZN per 100 gallons of water for greenhouse-grown plants.

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Phlox	1	
Photinia	1	
Poinsettia	1	Discontinue applications prior to bract formation; phytotoxicity is possible.
Poplar	1	
Prayer Plant (Maranta)	1	
Privet, Ligustrum	1	
Rhododendron	1,2,4	
Rose	1	Use 1.6 pints per 100 gallons of water for greenhouse grown plants.
Sand Cherry	1,2	
Sequoia	1	
Spiraea	1	
Statice	1	
Sycamore, Planetree	1	
Syngonium	1	
Tulip	1	
Viburnum	5	
Walnut, Juglans	1	
Zebra plant (Aphelandra)	1	
Zinna	1,5	

The following ornamental plant species which have been tested with Chlorothalonil 500 ZN at recommended rates (1.9 teaspoons per 2 gallons of water, 7 to 14 day retreatment interval) did not exhibit phytotoxicity:

Botanical Name:	Common Name:
Aechmea fasciata	Aechmea
Araucaria heterophylla	Norfolk Island Pine
Asplenium nidus	Birdnest Fern
Bougainvillea spp.	Bougainvillea
Caladium spp.	Caladium
Calathea makoyana	Peacock plant
Callistephus chinensis	Aster
Carissa grandiflora	Natal plum
Clerodendron thomsonae	Bleeding Heart
Codiaeum spp.	Croton
Cordylone terminalis	Ti Plant
Crassula argentea	Jade Plant
Cyrtanthium falcatum	Holly Leaf Fern
Dionaea muscipula	Venus Fly Trap
Dizygotheca elegantissima	False Aralia
Epipremnum aureum	Golden Pothos, Scindapsus
Episcia cupreata	Flame Violet
Fittonia spp.	Silver-nerve Plant
Gerbera jamesonii	Gerber Daisy
Gynura sarmantosa	Purple Passion Vine
Gypsophila paniculata	Baby's Breath
Hoya spp.	Wax Plant
Ilex cornuta	Chinese Holly
Ilex crenata	Japanese Holly
Impatiens spp.	Impatiens
Pilea cadieri	Aluminum Plant
Platyserium spp.	Staghorn Fern
Sansevieria trifasciata "Hahnii"	Birdnest Sansevieria
Tolmiea menziesii	Piggy-back Plant
Yucca elephantipes	Spineless Yucca
Zygocactus truncatus	Christmas Cactus

Note: DO NOT apply Chlorothalonil 500 ZN to either green or variegated Pittosporium or to Schefflera, as multiple applications have been demonstrated to cause phytotoxic responses.

## CONDITIONS OF SALE AND WARRANTY

The DIRECTIONS FOR USE of this product are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a

manner inconsistent with its labeling, all of which are beyond the control of FarmSaver.com, LLC or the seller. All such risks shall be assumed by the buyer.

FarmSaver.com, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the DIRECTIONS FOR USE when it is used in accordance with such directions, subject to the inherent risks mentioned above.

**FARMSAVER.COM, LLC NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

**THIS WARRANTY EXTENDS TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS, OR CAUTIONS. BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.**

FarmSaver.com, LLC and the seller offer this product, and the buyer and user accept it, subject to the foregoing CONDITIONS OF SALE AND WARRANTY.

Quali-Pro is a trademark of FarmSaver.com, LLC.

Benlate is a registered trademark of DuPont.

Copper-N Count is a registered trademark of Mineral Research and Development Corporation.

DiPel is a registered trademark of Abbott Laboratories.

Foil is a registered trademark of Ecogen Inc.

Latron B-1956 is a trademark of Rohm and Haas Company.

Questions? Call 1-800-979-8994.

FarmSaver.com, LLC  
PO Box 21365  
Seattle, WA 98111



# CLT 825

FUNGICIDE

<b>ACTIVE INGREDIENT:</b>	<b>BY WEIGHT</b>
Chlorothalonil (tetrachloroisophthalonitrile)	82.5%
<b>INERT INGREDIENTS:</b>	17.5%
<b>TOTAL</b>	100.0%

Contains 0.825 Pound Active Ingredient Per 1.0 Pound of Product

EPA REG. NO. 66222-149-73220

EPA Est. No. 37429-GA-02

## KEEP OUT OF REACH OF CHILDREN WARNING – AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

See inside booklet for complete Precautionary Statements, Directions for Use, and Conditions of Sale and Warranty.

Manufactured for FarmSaver.com, LLC  
4515 Falls of Neuse Road, Suite 300  
Raleigh, NC 27609

FIRST AID	
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> <li>Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>Do not give anything by mouth to an unconscious or convulsing person.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies involving this product, call ProSAR at 1-877-250-9291.	
<b>NOTE TO PHYSICIAN:</b> Persons having temporary irritation may respond to treatment with antihistamines or steroid creams and/or systemic steroids.	

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS WARNING

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Maybe be fatal if inhaled. Do not breathe the dust or spray mist. Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid prolonged contact with skin. Do not take internally.

**Note to user:** This product may produce mild bronchial irritation, and temporary irritation of the skin characterized by redness or rash on exposed skin areas. Persons having allergic reactions should contact a physician.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical resistance category selection chart.

For WPS or non-WPS applications made in enclosed areas, such as greenhouses, applicators and other handlers must wear a NIOSH-approved respirator with any N, P, R, or HE filter.

**WPS Uses (commercial production on farms, forests, nurseries, sodfarms, and in greenhouses):**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- A NIOSH-approved respirator with any N, P, R, or HE filter
- Protective eyewear

**Non-WPS Uses (such as applications to non-residential turf, golf courses, etc.):**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### ENGINEERING CONTROLS STATEMENT

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

### ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates and wildlife. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high-water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

This chemical is known to leach through soil into groundwater under certain conditions as a result of labeled use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

This chemical can contaminate surface water through spray drift. Under some conditions, it may also have a high potential for runoff into surface waters for several days to weeks after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas within field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear

**Special Eye Irritation Provisions:** This product is a severe eye irritant. Although the restricted-entry interval expires after 12 hours, for the next 6.5 days, entry is permitted only when the following safety measures are provided:

- (1) At least one container designed specifically for flushing eyes must be available in operating condition at the WPS-required decontamination site intended for workers entering the treated area.
- (2) Workers must be informed, in a manner they can understand:
  - that residues in the treated area may be highly irritating to their eyes,
  - that they should take precautions, such as refraining from rubbing their eyes, to keep residues out of their eyes,
  - that if they do get residues in their eyes, they should immediately flush their eyes using the eyeflush container that is located at the decontamination site or using other readily available clean water, and
  - how to operate the eyeflush container.



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## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides, 40 CFR Part 170. The WPS applies when the product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.  
Do not enter or allow others to enter the treated area until sprays have dried.

## APPLICATION INSTRUCTIONS

Armor Tech CLT 825 a dry flowable product containing chlorothalonil, is recommended for use as a spray for the control of many important plant diseases.

## RESISTANCE MANAGEMENT

To avoid the development of tolerant or resistant strains of fungi, Armor Tech CLT 825 should always be tank mixed with a fungicide of different chemistry, and/or a fungicide of different chemistry should be alternated with Armor Tech CLT 825 at each application. If after using Armor Tech CLT 825 as recommended and the treatment is not effective, a tolerant or resistant strain of fungi may be present. Discontinue the use of Armor Tech CLT 825 for at least one season.

Armor Tech CLT 825 is effective for use in programs that attempt to minimize disease resistance to fungicides. Armor Tech CLT 825 has a multi-site mode of action and may be used to delay or prevent the development of resistance to single-site fungicides. Consult with your Federal or State Cooperative Extension Service representatives for guidance on the proper use of Armor Tech CLT 825 in programs that seek to minimize the occurrence of disease resistance to other fungicides.

## GENERAL PRECAUTIONS

Armor Tech CLT 825 can be used effectively in dilute or concentrate sprays. Thorough, uniform coverage is essential for disease control.

Do not combine Armor Tech CLT 825 in a spray tank with pesticides, surfactants, or fertilizers, unless prior use has shown the combination to be physically compatible, effective, and noninjurious under conditions of use. Do not combine Armor Tech CLT 825 with DiPel 4L, Foli<sup>®</sup>, Triton AG-98, Triton B-1956 and Latron<sup>®</sup> B-1956 as phytotoxicity may result from the combination when applied to crops listed on this label.

The required amount of Armor Tech CLT 825 should be added slowly into the spray tank during filling. With concentrate sprays, premix the required amount of Armor Tech CLT 825 in a clean container and add to the spray tank as it is being filled. Keep agitator running when filling spray tank and during spray operations.

Dosage rates on this label indicate pounds of Armor Tech CLT 825 per acre, unless specified otherwise. Under conditions favoring disease development, the high rate specified and shortest applications interval should be used.

## APPLICATION PRECAUTIONS AND REQUIREMENTS

This product must not be applied within 150 feet for aerial and air-blast applications, or 25 feet for ground applications of marine/estuarine water bodies unless there is an untreated buffer area of that width between the area to be treated and the water body.

## SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses, or to applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed  $\frac{1}{2}$  the length of the wingspan or rotor.
2. Excluding helicopters, nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the [Aerial Drift Reduction Advisory Information](#).

## Aerial Drift Reduction Advisory Information:

### INFORMATION ON DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable conditions (see *Wind, Temperature*).

### CONTROLLING DROPLET SIZE—General Techniques

**Volume**—Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

**Pressure**—Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

### CONTROLLING DROPLET SIZE—Aircraft

**Number of nozzles**—Use the minimum number of nozzles that provide uniform coverage.  
**Nozzle orientation**—Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.  
**Nozzle type**—Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift noz-

zles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift potential.

### BOOM HEIGHT

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

### BOOM LENGTH

For some use patterns, reducing the effective boom length to less than  $\frac{1}{2}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

### APPLICATION HEIGHT

Application should not be made at a height greater than 10 ft. above the top of the largest plants, unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### SWATH ADJUSTMENT

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the upwind and downwind edges of the field, the application must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

### WIND

Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential.

**NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

### TEMPERATURE AND HUMIDITY

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

### TEMPERATURE INVERSIONS

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### SENSITIVE AREAS

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, nontarget crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

### SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

### AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring. **NOTE:** Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration.

### AIR ASSISTED (AIR BLAST) TREE AND VINE SPRAYERS

Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radically or laterally directed air stream. In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy.
- Block off upward pointed nozzles when there is no overhanging canopy
- Use only enough air volume to penetrate the canopy and provide good coverage.
- Do not allow spray to go beyond the edge of the cultivated area. Spray the outside row only from outside the planting.

### CHEMIGATION

Apply this product only through center pivot, motorized lateral move, traveling gun, solid set, and portable (wheel move, side roll, end tow, or hand move) irrigations system(s). Do not apply this product through any other type of irrigation system. Use only on crops specifically designated in the **DIRECTIONS FOR USE**.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service Specialists, equipment manufacturers, or other experts.

A person knowledgeable of the chemigation system and responsible for its operation, or

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under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

### Specific Instructions for Public Water Systems:

- Public water system means a system for the provision to the public of piped water from human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Always inject Armor Tech CLT 825 into irrigation water after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides on the intake line on the suction side of the pump.
- Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

### Specific Instructions for Sprinkler Irrigation Systems:

Armor Tech CLT 825 may be used through two basic types of sprinkler irrigation systems as outlined in Sections A and B. Determine which type of system is in place, then refer to the appropriate directions provided for each type.

#### A. Center Pivot, Motorized Lateral Move, and Traveling Gun Irrigation Equipment

For injection of pesticides, these continuously moving systems must use a positive displacement injection pump, of either diaphragm or piston type, constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock and capable of injection at pressures approximately two to three times those encountered within the irrigation water line. Venturi application units cannot be used on these systems.

Fill chemical supply tank of injection equipment with water. Operate system for one complete revolution or run across the field, measuring time required, amount of water injected,

and acreage covered. Thoroughly mix recommended amount of Armor Tech CLT 825 for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run. Mixture in the chemical supply tank must be continuously agitated during the injection run. Shut off injection equipment after one revolution or run, but continue to operate irrigation system until Armor Tech CLT 825 has been cleared from sprinkler head.

#### B. Solid Set and Portable (Wheel Move, Side Roll, End Tow, or Hand Move) Irrigation Equipment

With stationary systems, an effectively designed in-line venturi applicator unit is preferred which is constructed of materials that are compatible with pesticides, however, a positive-displacement pump can also be used.

Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a 30 to 45 minute period. Mix desired amount of Armor Tech CLT 825 for acreage to be covered with water so that the total mixture of Armor Tech CLT 825 plus water in the injection tank is equal to the quantity of water used during calibration, and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. No agitation should be required. Armor Tech CLT 825 can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until Armor Tech CLT 825 has been cleared from last sprinkler head.

Do not use on greenhouse grown crops.

#### TREE CROPS—APPLICATION INSTRUCTIONS

Apply Armor Tech CLT 825 in sufficient water and with proper calibration to obtain uniform coverage of tree canopy. Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy. If application with ground equipment is not feasible, Armor Tech CLT 825 may be applied with aircraft using at least 20 gallons of spray per acre. When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Armor Tech CLT 825 listed may be used. Both ground and aircraft methods of application are recommended unless specific directions are given for a crop. Application through sprinkler irrigation systems is not recommended unless specific directions are given for a crop. See the following instructions for application and calibration.

DO NOT allow livestock to graze treated areas. The following spray volumes are recommended as gallons of spray per acre:

CROP	SPRAY VOLUME (Gallons per Acre)	
	Dilute	Concentrate
Conifers:	Not used	10 to 20 (aircraft)
Forest Stands	100	10 to 50 (aircraft or ground equipment)
Christmas Trees	100	5 to 10 (ground equipment only)
Nursery Beds	100	5 to 10 (ground equipment only)

CROP	DISEASES CONTROLLED	QUALI-PRO CHLOROTHALONIL DF RATE PINTS/ACRE	SEASONAL LIMIT PINTS/ACRE	APPLICATION DIRECTIONS
CONIFERS Pines, Spruces	See Below	See Below	20.0	The minimum retreatment interval for established trees is 21 days. The minimum retreatment in nursery beds is 7 days.  Single-application technique: In Christmas tree plantations or forest stands, make one application in the spring when new shoot growth is 1/2 to 2 inches in length.  Make the first application in spring when new shoot growth is 1/2 to 2 inches in length. Make additional applications at 4 week intervals until conditions no longer favor disease development. For use in nursery beds, apply the highest rate specified on a 4 week schedule.  Apply in early spring prior to budbreak. Repeat applications at approximately 6 to 8 week intervals, until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended, then resumed upon next occurrence of needle wetness.  Apply at budbreak and repeat at 3 to 4 week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular budbreak occurs, apply weekly until all trees have broken bud, then every 3 to 4 weeks as specified above. In nursery beds, use the high rate on a 3 week schedule.  Begin applications in nursery beds when seedlings are 4 inches tall and when cool, moist conditions favor disease development. Make additional applications at 7 to 14 day intervals as long as disease favorable conditions persist.  Begin applications when 10% of buds have broken and twice thereafter at 7 to 10 day intervals.
	Swiss Needlecast	2.5-5		
	Scleroterris Canker (Pines), Swiss Needlecast	1.2-2.5		
	Sirococcus Tip Blight	1.8-3.2		
	Rhizosphaera Needlecast (Spruces), Scirrhia Brown Spot (Pines)	5.0		
	Cyclaneusma and Lophodermium Needlecasts (Pines)	2.5-5.0		
	Rhabdocline Needlecast (Douglas fir)	1.4-2.5		
	Botrytis Seedling Blight Phoma Twig Blight	1.4-2.5		
	Autoecious Needle Rust (Weir's Cushion)(Spruces)	5.0		

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## GRASS: SODFARMS

Use of this product on home lawns is prohibited.

Apply Armor Tech CLT 825 in 30 to 40 gallons of water per acre. Begin applications when conditions favor disease development and repeat applications as long as these conditions persist using the rates recommended in the following table.

Under severe disease conditions, a single application of 15 pints per acre may be made with a 7 day retreatment interval. Subsequent applications must follow the rates and retreatment intervals outlined in the following table for the remainder of the year.

Do not mow or water after treatment until spray deposited on grass is thoroughly dry. Armor Tech CLT 825 should always be used in conjunction with good turf management practices.

Sodfarm turf treated with chlorothalonil prior to harvest must be mechanically cut, rolled, and harvested. Follow all provisions outlined in the Agricultural Use Requirements box.

DISEASES CONTROLLED	LOW DISEASE PRESSURE TREATMENT REGIME		EXTREME DISEASE CONDITION	
	Retreatment Interval (Days)	Application Rate (Lbs./Acre) <sup>1</sup>	Minimum Retreatment Interval for the Maximum Single Application (Days)	Application Limit Per Year for Sodfarms (Lbs./Acre)
Dollar Spot	7-10	2.5 <sup>2</sup> -5.0	7	15.75
	14 - 21	5.0-8.8		
Leaf Spot, Melting Out, Brown Blight	7-10	5.0		
	14 - 21	5.0-8.8		
Brown Patch	7-14	5.0-8.8		
Gray Leaf Spot	7-10	5.0-8.8		
Red Thread	7-10	5.0-8.8		
Anthracnose	7-14	5.0-8.8		

<sup>1</sup>One single application of 13.6 lbs. per acre using a minimum retreatment interval of 14 days may be made per year for control of severe disease conditions. After using this high rate the lower rates and retreatment intervals in this table must be followed.

<sup>2</sup>Low rate is not effective on intensively mowed grasses.

Diseases are caused by some of the following fungi:

Dollar Spot: *Sclerotinia homeocarpa*, *Lanzia* or *Moellerodiscus* spp.  
 Leaf Spot, Melting Out and Brown Blight: *Drechslera* spp., *Bipolaris* spp., *Curvularia* spp.  
 Brown Patch: *Rhizoctonia* spp.  
 Anthracnose: *Collectotrichum*

## GOLF COURSE FAIRWAYS

Apply Armor Tech CLT 825 in 30 to 40 gallons of water per acre. Begin applications when conditions favor disease development and repeat applications as long as these conditions persist. Under severe disease conditions, use the highest rate and shortest interval corresponding with the application schedule selected from the table below.

Do not mow or water after treatment until spray deposited on grass is thoroughly dry. Armor Tech CLT 825 should always be used in conjunction with good turf management practices. For reentry into treated areas, refer to the Non-Agricultural Use Requirements box.

## FAIRWAYS:

DISEASES CONTROLLED	Application Interval (days)	Application Rate (lb/ac) <sup>1</sup>	Seasonal Limit (lb/ac/year)
Dollar Spot	7-10	2.5 <sup>2</sup> -5	31.5
	14 - 21	5.8-8	
Leaf Spot, Melting Out, Brown Blight	7-10	5	
	14 - 21	5-8.8	
Brown Patch	7-14	5-8.8	
Gray Leaf Spot	7-10	5-8.8	
Red Thread	7-10	5-8.8	
Anthracnose	7-14	5-8.8	

<sup>1</sup>One single application of 13.6 pounds per acre of Armor Tech CLT 825 using a minimum retreatment interval of 14 days, may be made per year for control of severe disease conditions. After using this high rate, the lower rates and retreatment intervals in the above table must be followed.

<sup>2</sup>Low rate is not effective on intensively mowed grasses.

## GOLF COURSE TEES AND GREENS

Apply Armor Tech CLT 825 in an adequate amount of water to provide complete coverage. This amount may vary from 90 to 450 gallons to provide complete coverage. See below for suggested rates and timing. Under severe disease conditions, use the high rate. A maximum seasonal amount of 63 pounds per acre may be applied to tees; no more than 88.4 pounds per acre of Armor Tech CLT 825 may be applied during a year to greens. For reentry into treated areas, refer to the Non-Agricultural Use Requirements box.

DISEASES CONTROLLED <sup>1</sup>	Application interval (days)	Application Rate (lb/ac)		Seasonal Limit (lb/ac/year)
		Before disease occurs	After disease has occurred <sup>2</sup>	
Dollar Spot	7-10 days	5-8.8	8.8	88.4 (greens) 63 (tees)
Brown Patch	7-14 days	5-8.8	8.8	
Leaf Spot, Melting Out	7-10 days	5-8.8	8.8	
Gray Leaf Spot	7-10 days	5-8.8	8.8	
Red Thread	7-10 days	5-8.8	8.8	
Anthracnose	7-14 days	7.5-8.8	-	
Copper Spot	7-10 days	8.8	8.8	
Stem Rust (Blue Grass)	7-14 days	8.8	8.8	
Dichondra: Leaf Spot (California Only)	7-14 days	8.8	8.8	

<sup>1</sup>Diseases listed are caused by fungi, some of which are named as follows:

- Dollar Spot: *Sclerotinia homeocarpa*, *Lanzia* or *Moellerodiscus* spp.
- Brown Patch: *Rhizoctonia solani*, *R. zeae*, *R. cerealis*
- Leaf Spot; Melting Out; Brown Blight: *Drechslera* spp. (including *D. poae*, *D. siccans*, *Bipolaris sorokiniana*, *Curvularia* spp.)
- Gray Leaf Spot: *Pyricularia grisea*, *P. oryzae*
- Red Thread: *Laetisaria tucliformis*
- Anthracnose: *Collectotrichum graminicola*
- Copper Spot: *Gloeocercospora sorghi*
- Stem Rust: *Puccinia graminis*
- Dichondra Leaf Spot: *Alternaria* spp.

<sup>2</sup>A single maximum application of 13.6 pounds per acre, with a 14 day retreatment interval, may be made for control of extreme disease conditions in a year.

## Gray Snow Mold caused by *Typhula* spp.:

Apply in sufficient water to obtain adequate spray coverage (90 to 450 gallons per acre). Apply 8.8 pounds per acre of turf areas. Application must be made before snow cover in autumn. Use the high single maximum application rate of 13.6 pounds per acre if turf layer remains frozen prior to snow cover. If snow cover is intermittent or lacking during the winter, reapply Armor Tech CLT 825 at 8.8 pounds per acre of turf at monthly intervals until gray snow mold conditions no longer prevail. In areas where pink snow mold (Gerlachia or Fusarium patch) is likely to occur, apply a single application of 8.8 pounds per acre of Armor Tech CLT 825 in combination with products containing iprodione at 88.4 ounces active ingredient per acre of turf area. The maximum seasonal application limits are 88.4 pounds per acre for greens, 63 pounds per acre for tees, and 31.5 pounds per acre for general turf and fairways. Read and observe all label directions for products containing these active ingredients.

## Fusarium (Gerlachia) Patch:

For control of Fusarium patch only in areas where snow cover is intermittent or lacking during the winter, apply 8.8 pounds per acre of Armor Tech CLT 825. Make an initial application of 13.6 pounds per acre in late autumn; and reapply applications of 8.8 pounds per acre at 21 to 28 day intervals until conditions favoring Fusarium patch no longer exist. The maximum seasonal application limits are 88.4 pounds per acre for greens, 63 pounds per acre for tees, and 31.5 pounds per acre for general turf and fairways.

## Algal Scum:

For prevention of algal scum on turfgrasses caused by cyanobacteria of the genus *Lyngbia*, apply Armor Tech CLT 825 at the rate of 5 to 8.8 pounds per acre of turf on a 7 to 14 day schedule. When algal scum is well established, every attempt should be made to dry out the afflicted area. Once dry, spiking or verticutting should be done to enhance turfgrass recovery in conjunction with an Armor Tech CLT 825 application at the rate of 13.6 pounds per acre with a 7 day retreatment at the 5 to 8.8 pounds per acre rate. Several applications of Armor Tech CLT 825 at the high 8.8 pounds per acre rate may be necessary for turfgrass recovery. Only a preventative spray program with Armor Tech CLT 825 will prevent a recurrence of the algae when environmental conditions are favorable for algal growth. The maximum seasonal application limits are 88.4 pounds per acre for greens, 63 pounds per acre for tees, and 31.5 pounds per acre for general turf and fairways.

## ORNAMENTAL PLANTS

Use of this product on home lawns is prohibited. Armor Tech CLT 825 may be used on ornamental plants grown in the field, nurseries, or greenhouses.

## Ornamentals grown in nurseries, greenhouses:

Apply Armor Tech CLT 825 at the rates given in the tables below. Apply in a spray to runoff, when conditions are favorable for disease development. Repeat applications at 7 to 14 day intervals until conditions are no longer favorable. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, apply Armor Tech CLT 825 at 7 day intervals. Armor Tech CLT 825 should be applied to plants when both foliage and flowers are dry or nearly dry.

Do not use mistblowers or high pressure spray equipment when making applications of Armor Tech CLT 825 in greenhouses.

## Ornamentals grown in the field:

For aerial application to field-planted ornamentals, a minimum rate of 10 gallons of spray per acre should be used during application. For field-grown ornamentals, excluding roses and pachysandra, apply 0.75 pound per 100 gallons (full dilution) or 1.87 pounds per acre in a single treatment. No more than 44.1 pounds per acre of Armor Tech CLT 825 may be applied to field-grown ornamentals per year. Armor Tech CLT 825 should be applied to plants when both foliage and flowers are dry or nearly dry.

For field-grown roses, apply 1.3 pounds of Armor Tech CLT 825 per acre for a single appli-

# Chlorothalonil DF

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cation.

For field-planted pachysandra, apply 3.75 pounds of Armor Tech CLT 825 per acre for a single application.

**Do not combine Armor Tech CLT 825 in the spray tank with pesticides, surfactants, or fertilizers unless prior use has shown the combination to be physically compatible, effective, and noninjurious under your conditions of use.**

Use of Armor Tech CLT 825 is recommended for control of fungal diseases referred to by numbers in parentheses following each ornamental. Ornamentals listed on this label have been tested and found to tolerate applications of Armor Tech CLT 825 at the recommended rates. Plant sensitivities have been found to be acceptable in specific genera and species listed on this label, however, phytotoxicity may occur. Due to the large number of species, widely varying growth conditions, and varieties of ornamentals and nursery plants, it is impossible to test every one for sensitivity. Neither the manufacturer nor seller has determined whether or not Armor Tech CLT 825 can be used safely prior to commercial use. The user should test for possible phytotoxic responses, using recommended rates on ornamental plants on a small area prior to commercial treatments and observe for 7 to 10 days for symptoms of phytotoxicity. Applications made during bloom may damage flowers and/or fruits.

**NOTE:** Fruits and other treated foliage must not be eaten or fed to livestock.

## Diseases Controlled by Armor Tech CLT 825:

### 1. Leaf Spots/Follar Blights:

Actinopelte Leaf Spot  
 Alternaria Leaf Spot/Leaf Blight  
 Anthracnose Leaf Blotch, Spot  
 Anthracnose (Discula) Blight  
 Ascochyta Blight  
 Bipolaris (Helminthosporium) Leaf Spot  
 Black Spot on Roses  
 Botrytis Leaf Spot, Leaf Blight  
 Cephalosporium Leaf Spot  
 Cercospora Leaf Spot  
 Cercosporidium Leaf Spot  
 Coryneum Blight (Shothole)  
 Corynespora Leaf Spot  
 Curvularia Leaf Spot  
 Cylindrosporium Leaf Spot  
 Dactylaria Leaf Spot  
 Didymellina Leaf Spot  
 Drechslera Leaf Spot  
 Fabraea (Entomosporium) Leaf Spot  
 Fusarium Leaf Spot  
 Gloeosporium Black Leaf Spot  
 Ink Spot (Drechslera)  
 Marssonina Leaf Spot  
 Monilinia Blossom Blight, Twig Blight  
 Mycosphaerella Ray Blight  
 Myrothecium Leaf Spot, Brown Rot  
 Nematostoma Leaf Blight  
 Phyllosticta Leaf Spot  
 Rhizoctonia Aerial or Web Blight  
 Ramularia Leaf Spot  
 Septoria Leaf Spot  
 Sphaeropsis Leaf Spot  
 Stagonospora Leaf Scorch  
 Tan Leaf Spot (Curvularia)  
 Volutella Leaf Blight

### 2. Flower Spots/Blights:

Botrytis Flower Spot, Flower Blight  
 Curvularia Flower Spot, Flower Blight  
 Monilinia Blossom Blight  
 Ovinia Flower Blight  
 Rhizopus Blossom Blight  
 Sclerotinia Flower Blight

### 3. Cylindrocladium Stem Canker

### 4. Phytophthora Leaf Blight, Dieback

### 5. Powdery Mildews:

*Erysiphe chioracearum*  
*Microsphaera* spp.

### 6. Rusts:

*Gymnosporangium* spp.  
*Puccinia* spp.  
*Pucciniastrum hydrangeae*

### 7. Taphrina Blister

### 8. Scab (Venturia inaequalis)

## Ornamentals recommended for treatment with Armor Tech CLT 825:

Avoid applications during bloom periods for those plants where flower injury is unacceptable.

For poinsettia, discontinue applications prior to bract formation; phytotoxicity is possible on bracts.

Plant (lb/100 gal)	Disease(s)	Application Rate	Comments
Aglaonema	1	2.5	
Andromeda (Pieris)	4	1.4	
Arabian Violet	2	1.0	
Areca Palm	1	2.5	
Artemisia	1	2.5	
Ash (Fraxinus)	1	1.4	
Aspen	1	1.4	
Azalea	1,2,4	1.4	
Begonia	1	1.0	
Boston Fern	1	2.5	
Buckeye, Horsechestnut	1	1.4	
Camellia	2	1.0	
Carnation	1,2	1.0	
Cherry-laurel	1	1.4	
Chrysanthemum	1,2	1.0	
Crabapple	1,6,8	1.4	
Crocus	1	1.0	
Daffodil	1	1.0	
Daisy	1	1.0	
Dogwood	1	1.4	
Dumbcane, Dieffenbachia	1	2.5	
Dracaena	1	2.5	
Eucalyptus	3	1.4	
Euonymus	1	1.4	
Fatsia (Aralia)	1	2.5	
Ficus	1	2.5	
Firethorn, Pyracantha	1	1.4	
Florida Ruffie Fern	1	2.5	
Flowering Almond	1,2	1.4	
Flowering Cherry	1,2	1.4	
Flowering Peach	1,2	1.4	
Flowering Plum	1,2	1.4	
Flowering Quince	1,2	1.4	
Geranium	1,6	1.0	
Gladiolus	1,2	1.0	
Hawthorn	1,6	1.4	
Holly	1	1.4	
Hollyhock	6	1.0	
Hydrangea (Foliage Only)	1,6	1.0	
Iris	1,2	1.0	
Leatherleaf Fern	1	2.5	
Lilac	5	1.4	
Lily	1	1.0	
Lipstick Plant	1	2.5	
Magnolia	1	1.4	
Maple	1	1.4	
Marigold	1	1.0	
Ming Aralia	1	2.5	
Mountain Laurel	1	1.4	
Narcissus	1	1.0	
Oak (Red Group Only)	1,7	1.4	
Oregon Grape (Mahonia)	6	1.4	
Oyster Plant (Rhoeo)	1	2.5	
Pansy	1	1.0	
Parlor Palm (Chamaedorea)	1	2.5	
Peperomia	1	2.5	
Petunia	1,4	1.0	
Philodendron	1,4	2.5	
Phlox	1	1.0	
Photinia	1	1.4	
Poinsettia	1	1.0	Discontinue applications prior to bract formation; phytotoxicity is possible.
Poplar	1	1.4	
Prayer Plant (Maranta)	1	2.5	
Privet, Ligustrum	1	1.4	
Rhododendron	1,2,4	1.4	
Rose	1	1.0	Avoid application during bloom period on plants where flower injury is unacceptable.
Sand Cherry	1,2	1.4	
Sequoia	1	1.4	
Spiraea	1	1.4	
Statice	1	1.0	
Sycamore, Planetree	1	1.4	
Syngonium	1	2.5	
Tulip	1	1.0	
Viburnum	5	1.4	
Walnut, Juglans	1	1.4	
Zebra Plant (Aphelandra)	1	2.5	
Zinnia	1,5	1.0	

The following ornamental plant species which have been tested with Armor Tech CLT 825 at recommended rates (1 to 2.5 pounds per 100 gallons) did not exhibit phytotoxicity (refer to the disease listing above):

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Botanical name	Common name	Disease(s) Controlled	Application Rate (lb/100 gal)
Aechmea fasciata	Aechmea	1	1-2.5
Araucaria heterophylla	Norfolk Island Pine	1	1-2.5
Asplenium nidus	Birdnest Fern	1	1-2.5
Bougainvillea spp.	Bougainvillea	1,4	1-2.5
Caladium spp.	Caladium	1	1-2.5
Calathea makoyana	Peacock Plant	1	1-2.5
Calistephus chinensis	Aster	1,2	1-2.5
Carissa grandiflora	Natal Plum	1	1-2.5
Clerodendron thomsonae	Bleeding Heart	1	1-2.5
Codiaeum spp.	Croton	1	1-2.5
Cordyline terminalis	Ti Plant	1	1-2.5
Crassula argentea	Jade Plant	1	1-2.5
Cyrthomium falcatum	Holly Leaf Fern	1	1-2.5
Dionaea muscipula	Venus Fly Trap	1	1-2.5
Dizygotheca elegantissima	False Aralia	1	1-2.5
Epipremnum aureum	Golden Pothos, Scindapsus	1	1-2.5
Episcia cupreata	Flame Violet	1	1-2.5
Fittonia spp.	Silver-Nerve Plant	1	1-2.5
Gerbera jamesonii	Gerbera Daisy	1,2,4,5	1-2.5
Gynura sarmatensis	Purple Passion Vine	1,4	1-2.5
Gypsophila paniculata	Baby's Breath	1,2,4	1-2.5
Hoya spp.	Wax Plant	1	1-2.5
Ilex cornuta	Chinese Holly	1	1-2.5
Ilex crenata	Japanese Holly	1	1-2.5
Impatiens spp.	Impatiens	1,2,6	1-2.5
Pilea cadierei	Aluminum Plant	1,4	1-2.5
Platyterium spp.	Staghorn Fern	1	1-2.5
Sansevieria trifasciata "Hahnii"	Birdsnest Sansevieria	1	1-2.5
Tolmeia menziesii	Piggy-Back Plant	1	1-2.5
Yucca elephantipes	Spineless Yucca	1	1-2.5
Zygocactus truncatus	Christmas Cactus	1	1-2.5

Note: Do not apply Armor Tech CLT 825 to either green or variegated Pittosporum or to Schefflera as multiple applications have been demonstrated to cause phytotoxic responses.

### STORAGE AND DISPOSAL

Do not contaminate water, foodstuffs, feed, or seed by storage or disposal.

**PESTICIDE STORAGE:** Store in a cool place. Protect from excessive heat. Store product in original container only way from water, food, or feed. Keep container closed to prevent spills and contamination. Carefully open containers. After partial use, replace lid and close tightly. Do not put concentrate or diluted product into food or drink containers.

**PESTICIDE DISPOSAL:** Do not contaminate water, food, or feed by disposal. Improper disposal of excess pesticide, pesticide spray, or rinsate is a violation of Federal law. Wastes resulting from the use of this product that cannot be used according to the label instructions or chemically reprocessed may be disposed of on site or at a landfill or waste disposal facility approved for pesticide disposal, or in accordance with all applicable Federal, state, or local regulations. For further guidance, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Empty containers retain vapor and product residues.

**Disposal of Plastic 1-Way Containers, Bottles, and Drums:** Do not reuse container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Disposal of Refillable Drums, Minibulk, and Bulk Containers:** Do not reuse container. If not returned to the point of purchase or to an alternate location designated by the registrant at the time of product purchase, triple rinse or pressure rinse the empty container and offer for reconditioning or recycling if available, or dispose of in a manner approved by state and local authorities.

**Refilling of Refillable Drums, Minibulk, and Bulk Containers:** When the container containing this product is empty, replace the cap and seal all opening that have been opened during use. DO NOT rinse empty container. Return the container to the point of purchase, or to an alternate refilling location designated by the registrant at the time of product purchase.

**Instructions for Users and Refillers:** The container must only be refilled with this pesticide product. DO NOT Reuse the container for Any Other Purpose. Do not transport if this container is damaged or leaking. If the container is damaged, leaking, or obsolete, or to obtain information about recycling refillable containers, contact Farmsaver.com, LLC OR your State Pesticide or environmental Control Agency or the Hazardous Waste representative at the nearest WPA Regional Office for guidance.

Cleaning is not necessary prior to refilling with the same product. Clean container before final disposal. Disposal of this container must be in compliance with the state and local regulations.

**Instructions for Refillers:** Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. If the container can not be refilled, triple rinse or pressure rinse the empty container and offer for recycling if available.

### LIMITATION OF WARRANTY AND LIABILITY

Read the entire Directions for Use, Conditions of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and must

be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Farmsaver.com, LLC. All such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** To the extent consistent with applicable law, Farmsaver.com, LLC makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of Farmsaver.com, LLC is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, Farmsaver.com, LLC disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

**LIMITATIONS OF LIABILITY:** To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at Farmsaver.com, LLC's election, the replacement of product.

Benlate is a registered trademark of DuPont.

Copper-Count N is a registered trademark of Mineral Research and Development Corporation.

DiPel is a registered trademark of Abbott Laboratories.

Foli is a registered trademark of Ecogen, Inc.

Latron is a trademark of Rohm and Haas Company.

Triton is a registered trademark of Union Carbide Corp.

Armor Tech CLT 825 (66222-149-73220)(EPA app 8-6-07)



# Specimen Label

## PPZ 143

### FUNGICIDE

BROAD SPECTRUM AND SYSTEMIC DISEASE CONTROL FOR TURF AND ORNAMENTALS AND A FLARE ROOT-INJECTED SYSTEMIC FUNGICIDE FOR CONTROL OF SELECTED DISEASES IN TREES

ACTIVE INGREDIENT:	% BY WT.
Propiconazole: 1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]Methyl]-1H-1,2,4-triazole	14.3%
INERT INGREDIENTS:	85.7%
TOTAL	100.0%

Contains 1.3 lbs. of active ingredient per gallon.

EPA Reg. No. 66222-41-73220

EPA EST. NO. 37429-GA-2

## KEEP OUT OF REACH OF CHILDREN WARNING – AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

See inside booklet for complete Precautionary Statements, Directions for Use, and Conditions of Sale and Warranty.

Manufactured for FarmSaver.com, LLC  
P.O. Box 21365  
Seattle, WA 98111

FIRST AID	
IF IN EYES	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
IF SWALLOWED	<ul style="list-style-type: none"> <li>Immediately call a poison control center or doctor.</li> <li>DO NOT give any liquid to the person.</li> <li>DO NOT induce vomiting unless told to do so by a poison control center or doctor.</li> <li>DO NOT give anything by mouth to an unconscious person.</li> </ul>
IF INHALED	<ul style="list-style-type: none"> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>Call a poison control center or doctor for further treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical emergencies involving this product call 1-800-368-5391.	
NOTE TO PHYSICIAN: There is no specific antidote for this product. Induce emesis or lavage stomach, taking care to avoid aspiration of stomach contents into lungs.	

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS WARNING-AVISO

Causes substantial, but temporary eye injury. DO NOT get in eyes or on clothing. Harmful if swallowed, inhaled, or absorbed through the skin. Avoid contact with skin or clothing. Avoid breathing vapor or spray mist.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category C on an EPA chemical-resistance category selection chart.

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride (PVC), or Viton
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. DO NOT reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### ENGINEERING CONTROLS STATEMENT

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40

CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS

#### User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

### ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. DO NOT apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. DO NOT contaminate water when disposing of equipment wash water.

### PHYSICAL OR CHEMICAL HAZARDS

DO NOT use or store near heat or open flame.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride (PVC), or Viton
- Shoes plus socks
- Protective eyewear

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter treated areas without protective clothing until sprays have dried.

### FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN PLANT INJURY OR POOR DISEASE CONTROL.

### GENERAL INFORMATION

Armor Tech PPZ 143 is a systemic fungicide for use on turfgrasses for the control of dollar spot (*Sclerotinia homoeocarpa*), brown patch (*Rhizoctonia solani*), anthracnose (*Colletotrichum graminicola*), red thread (*Laetisaria fuliformis*), pink patch (*Limonomycus roseipellis*), rust (*Puccinia graminis*), powdery mildew (*Erysiphe graminis*), stripe smut (*Ustilago striiformis* and *Urocystis agropyri*), summer patch (*Magnaporthe poae*), necrotic ring spot (*Leptosphaeria korrae*), spring dead spot (*Leptosphaeria korrae*, *Leptosphaeria narmari*, *Ophiostoma herpotricha*, *Gaeumannomyces graminis*), take-all patch (*Gaeumannomyces graminis*), leafspot (*Bipolaris* spp., *Drechslera* spp.), gray leafspot (*Pyricularia grisea*), pink snowmold (*Microdochium nivale*), Fusarium patch (*Fusarium nivale*), gray snowmold (*Typhula* spp.), yellow patch (*Rhizoctonia cerealis*), and zoysia patch (*Rhizoctonia solani*).

Armor Tech PPZ 143 also controls numerous diseases on ornamentals and other landscape and nursery plantings. It controls powdery mildews, rusts, leafspots, scabs, and blights. Refer to the appropriate section for specified diseases and plants.

DO NOT apply this product through any type of irrigation system.

### MIXING INSTRUCTIONS

Fill the spray tank 1/2 to 3/4 full with water. Add the proper amount of Armor Tech PPZ 143 and then add the rest of the water. Provide sufficient agitation during mixing and application to maintain a uniform emulsion.

If Armor Tech PPZ 143 is tank mixed with other products, use the following sequence:

1. Always check the compatibility of the tank mix using a jar test with proportionate amounts of Armor Tech PPZ 143, other chemicals to be used, and the water, before mixing in the spray tank.
2. Provide sufficient jet or mechanical agitation during filling and application to keep the tank mix uniformly suspended.

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3. Fill tank at least 1/2 full of clean water.
4. Add wettable powders to the tank first, allowing them to completely suspend in the tank before proceeding. This process can be hastened by premixing the product in water before adding to the tank.
5. Add flowables or suspensions next.
6. Add Armor Tech PPZ 143 next.
7. Add emulsifiable concentrates last.
8. **DO NOT** leave tank mix combinations in the spray tank for prolonged periods without agitation. Mix and apply them the same day.

### TANK MIXES

For broader spectrum control, Armor Tech PPZ 143 can be tank mixed with other fungicides. For example, Subdue may be tank mixed with Armor Tech PPZ 143 or used alone when conditions are favorable for Pythium blight. Armor Tech PPZ 143 is also compatible with numerous herbicides and insecticides. Check compatibility before tank mixing. Add Unite (3 pts. per 100 gals.) to tank mixes which are incompatible. Follow the directions under **MIXING INSTRUCTIONS** for tank mixes. Observe all directions, precautions, and limitations on labeling of all products used in tank mixes. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are registered.

### TURFGRASS AND DICHONDRA DISEASE CONTROL

1. USE Armor Tech PPZ 143 IN A PREVENTIVE DISEASE CONTROL PROGRAM.
2. Apply in sufficient water to ensure thorough coverage.

3. Apply after mowing **OR** allow sprayed area to completely dry before mowing.
4. For control of foliar diseases, allow sprayed area to completely dry before irrigation.
5. For control of soil-borne diseases, Armor Tech PPZ 143 can be watered in after application.
6. Under conditions optimum for high disease pressure, use the higher rate and the shorter interval.
7. For optimum turf quality and disease control, use Armor Tech PPZ 143 in conjunction with turf management practices that promote good plant health and optimum disease control.
8. Evaluate spray additives prior to use. Label directions are based on data obtained with no additives.
9. Before use of any fungicide, proper diagnosis of the organism causing the disease is important. Use of diagnostic kits or other means of identification of the disease organism is essential to determine the best control measures.
10. **DO NOT** apply more than 16 fl. oz. per 1,000 sq. ft./calendar year nor apply more than 5.4 gals. of product per acre per calendar year.
11. **DO NOT** graze animals on treated areas. **DO NOT** feed clippings from treated areas to livestock or poultry.
12. Bermudagrass can be sensitive to Armor Tech PPZ 143. **DO NOT** exceed 4 fl. oz. per 1,000 sq. ft. every 30 days on any variety of bermudagrass. In Florida, **DO NOT** apply Armor Tech PPZ 143 to bermudagrass golf course greens when temperatures exceed 90°F.

### Turfgrass—Specific Diseases, Rates, and Application Timing

Disease	Fl. Oz. Per 1,000 Sq. Ft.	Fl. Oz. Per Acre	Application Interval/Timing	Instructions
Dollar Spot ( <i>Sclerotinia homocarpa</i> )	0.5	22	7 days	Apply when conditions are favorable for disease development.
	0.5	22	14 days	Tank mix with low label rate of one of the following fungicides: Daconil 2787 F Daconil Ultrex
	1	44	21-28 days	Tank mix with low label rate of one of the following fungicides: Daconil 2787 F Daconil Ultrex Chipco 26019
	1-2	44-88	14-28 days	If using the 1-2 fl. oz. per 1,000 sq. ft. rate without tank mixing, make no more than 3 consecutive applications for dollar spot control before rotating to an alternate EPA-registered fungicide having a different mode of action.
Anthracnose ( <i>Colletotrichum graminicola</i> )	1-2	44-88	14-28 days	Apply when conditions are favorable for disease development. When disease pressure is high, use higher rates of Armor Tech PPZ 143 and shorter intervals. For broad spectrum control, tank mix with a registered contact fungicide at the label rate. If disease is present, mix 2 fl. oz. of Armor Tech PPZ 143 per 1,000 sq. ft. with the label rate of the above mentioned contact fungicides.
Brown Patch ( <i>Rhizoctonia solani</i> )	1-2	44-88	14-21 days	Begin applications in May or June before disease is present. Tank mix with a registered contact fungicide labeled for brown patch control at the label rate. Under conditions of high temperatures and high humidity, use the higher rates of Armor Tech PPZ 143 and shorter intervals.

### Turfgrass—Specific Diseases, Rates, and Application Timing (Cont'd)

Disease	Fl. Oz. Per 1,000 Sq. Ft.	Fl. Oz. Per Acre	Application Interval/Timing	Instructions
Powdery Mildew ( <i>Erysiphe graminis</i> ), Rust ( <i>Puccinia graminis</i> )	1-2	44-88	14-28 days	Apply when conditions are favorable for disease development. If disease is present, use 2 fl. oz. of Armor Tech PPZ 143 per 1,000 sq. ft.
Red Thread ( <i>Laetisaria luciformis</i> ), Pink Patch ( <i>Limonozyces roseipellis</i> )	2	88	14-21 days	Apply when conditions are favorable for disease development.
Stripe Smut ( <i>Ustilago striiformis</i> ) (Urocystis <i>agropyri</i> )	1-2	44-88	Fall or Spring	Apply once in the fall after grass becomes dormant or in the early spring before grass starts to grow.
Gray Leafspot ( <i>Pyricularia grisea</i> )	1-2	44-88	14 days	Apply when conditions are favorable for disease development. If using the 1 fl. oz. per 1,000 sq. ft. rate, tank mix with a registered contact fungicide at the label rate.
Melting Out, Leaf Spot ( <i>Bipolaris</i> spp.) ( <i>Drechslera</i> spp.)	1-2	44-176	14 days	Under light to moderate pressure, apply Armor Tech PPZ 143 to reduce the severity of leaf spot and melting out caused by Helminthosporium-type pathogens. For broad spectrum disease control, tank mix the 1 fl. oz. Armor Tech PPZ 143 rate with a registered contact fungicide at the label rate. Tank mix the 1-2 fl. oz. per 1,000 sq. ft. Armor Tech PPZ 143 rate with a registered contact fungicide at the label rate.
Summer Patch, Poa Patch ( <i>Magnaporthe poae</i> )	2 4	88 176	14 days 28 days	Apply Armor Tech PPZ 143 beginning in April. Use the 4 fl. oz. per 1,000 sq. ft. rate on a 28-day schedule and the 2 fl. oz. per 1,000 sq. ft. rate on a 14-day schedule.

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## Turfgrass—Specific Diseases, Rates, and Application Timing (Cont'd)

Disease	Fl. Oz. Per 1,000 Sq. Ft.	Fl. Oz. Per Acre	Application Interval/Timing	Instructions
<b>Take-All Patch</b> ( <i>Gaeumannomyces graminis</i> )	2-4	88-176	Spring and Fall	Apply Armor Tech PPZ 143 to reduce the severity of take-all patch. Make 1 to 2 fall applications in September and October or when night temperatures drop to 55°F, and 1 to 2 spring applications in April and May, depending on local recommendations.
<b>Spring Dead Spot</b> ( <i>Leptosphaeria korrae</i> , <i>Leptosphaeria narmani</i> , <i>Ophiosphaerella herpotricha</i> , <i>Gaeumannomyces graminis</i> )	4	176	30 days	Make 1 to 3 applications. For one application, apply in September or October. For multiple applications, begin sprays in August.
<b>Necrotic Ring Spot</b> ( <i>Leptosphaeria korrae</i> )	4	176	Fall or Spring	Apply in the fall and/or the early spring depending on local recommendations.
<b>Snowmold Gray</b> ( <i>Typhula spp.</i> ) <b>Pink</b> ( <i>Microdochium nivale</i> )	2-4	88-176	Late Fall	Apply one application in the late fall before snow cover. <b>DO NOT</b> apply on top of snow. For optimum disease control, the 2 and 3 fl. oz. Armor Tech PPZ 143 rates should be tank mixed with either PCNB or chlorothalonil at label rates.
<b>Fusarium Patch</b> ( <i>Fusarium nivale</i> )	2-4	88-176	Fall-Early Spring	Apply when conditions are favorable for disease development.
<b>Yellow Patch</b> ( <i>Rhizoctonia cerealis</i> )	3-4	130-176	Late Fall	Apply one application in the late fall before snow cover. <b>DO NOT</b> apply on top of snow. If using a 3 fl. oz. per 1,000 sq. ft. rate, tank mix with a registered contact fungicide at the label rate.
<b>Zoysia Patch, large patch of</b> ( <i>Rhizoctonia solani</i> )	3-4	130-176	Early Fall	Make one application in the early fall (mid-September to mid-October) prior to development of disease symptoms. Consult local turfgrass extension experts to determine the optimum application timing for your area.

## Dichondra—Specific Disease, Rates, and Application Timing

Disease	Fl. Oz. Per 1,000 Sq. Ft.	Fl. Oz. Per Acre	Application Interval/Timing	Instructions
<b>Dichondra Rust</b> ( <i>Puccinia dichondrae</i> )	2	88	14-21 days	Apply when conditions are favorable for disease development.

## Establishment of Cool Season Turfgrass

Armor Tech PPZ 143 provides control of many diseases of turf, and its primary use is as a fungicide for use against the diseases listed on this label. As an additional benefit, Armor Tech PPZ 143 will improve the rate of establishment when it is applied to cool season grass seedlings or sod.

**New Seedlings:** Apply 1 fl. oz. per 1,000 sq. ft. at the 2- to 3-leaf stage of growth for faster root development and top growth.

**Sod:** Apply 1 fl. oz. per 1,000 sq. ft. 2-6 weeks before cutting for increased sod knitting and faster establishment after laying.

**DISEASE CONTROL IN NURSERIES (FIELD) AND LANDSCAPE PLANTINGS**  
1. USE Armor Tech PPZ 143 IN A PREVENTIVE DISEASE CONTROL PROGRAM. To determine the use directions for controlling a disease on an ornamental plant species, select the plant species in Table 1. The number in parentheses following the plant species refers you to the disease(s) controlled in Table 2. Find the disease in Table 2. The letter in brackets following the disease refers you to the application regime in Table 3.  
2. Allow spray to dry before overhead irrigation is applied.  
3. Optimum benefit of Armor Tech PPZ 143 is obtained when used in conjunction with sound disease management practices.

### General Recommendations

Armor Tech PPZ 143 may be used at rates of 2-24 fl. oz. per 100 gals. of water for control of diseases of ornamental plant species (see Tables 1, 2, and 3).

**Note:** You can apply up to 5.4 gals. of Armor Tech PPZ 143 per acre per crop per calendar year.

For general disease control in landscapes, apply 6-8 fl. oz. per 100 gals. of water every 21 days. For best control, begin Armor Tech PPZ 143 applications before disease development.

**Note:** Plant tolerances to Armor Tech PPZ 143 have been found acceptable for the specific genera and species of plants listed under the DIRECTIONS FOR USE. In addition, crop tolerance to Armor Tech PPZ 143 has been demonstrated (at a rate of 6-8 fl. oz. per 100 gals.) on the following ornamental plants: ajuga, Bartlett pear, bayberry, camelia, candy tuft, cotoneaster, elm, English ivy, euonymus, German statice, holly, hollyhock, impatiens, linden, liriopsis, magnolia, maples, peony, privet, raphiolepis, redbud, sweetgum, sycamore, tulip tree, vinca, and wax myrtle. Other plant species may be sensitive to Armor Tech PPZ 143 and diseases other than those listed may not be controlled. Before using Armor Tech PPZ 143 on ornamental plants or for diseases that are not listed in the DIRECTIONS FOR USE, test Armor Tech PPZ 143 on a small-scale basis first. **DO NOT** apply Armor Tech PPZ 143 to African violets, begonias, Boston fern, or geraniums. Apply the recommended rates for a particular type of disease, i.e., rust, powdery mildew, etc., and evaluate for phytotoxicity and disease control prior to widespread use.

**Table 1. Ornamentals—Plant Species**

Numbers in parentheses refer to diseases controlled. See Table 2.

Herbaceous Ornamentals	Woody Ornamentals	Nonbearing Fruits and Nuts (Nurseries and Landscape Plantings)
Calendula (4a)	Ametanchier (4d)	Apple (3q, 4d, 5a)
Carnation (5f)	Ash (4c)	Cherry (2b, 3d)
Chrysanthemum (2a)	Azalea (2c, 4b)	Citrus (3m)
Delphinium (4a)	Crabapple (3c, 3q, 4c, 5a)	Nectarine (2b)
Gomphrena (3a)	Crape Myrtle (4a)	Peach (2b)
Iris (5d)	Dogwood (3h, 4c)	Pecan (3b, 3c, 3f, 3l, 3n, 4e)
Marigold (3a)	Douglas Fir (5b)	Plum (2b)
Monarda (4c)	Hawthorn (5a)	Walnut (3i)
Phlox (4c)	Juniper (1a)	
Snapdragon (5d)	Lilac (4c)	
Sweet William (3k) ( <i>Dianthus barbatus</i> )	Oaks (3p)	
Zinnia (4c)	Pines (1b, 1c)	
	Poplars (5b)	
	Pyracantha (3o)	
	Red Tip Photinia (3i)	
	Rhododendron (2c, 3n)	
	Roses (3g, 4e, 5c) (Outdoor Use Only)	
	Shasta Fir (5e)	

**Table 2. Diseases**

Letters in brackets refer to application regimes. See Table 3.

- Conifer Blights
  - Phomopsis juniperovora* ( *Phomopsis Blight* ) [B]
  - Sirococcus strobilinus* ( *Tip Blight* ) [D]
  - Sphaeropsis sapinea* ( *Diplodia Tip Blight* ) [B]
- Flower Blight
  - Ascochyta chrysanthemi* ( *Ray Blight* ) [C]
  - Monilinia spp.* [A]
  - Ovulinia spp.* [B]
- Leaf Blights/Spots
  - Alternaria spp.* [B]
  - Cercospora spp.* ( *Brown Leaf Spot* ) [C]
  - Cladosporium spp.* ( *Scab* ) [C]
  - Coccomyces hiemalis* [A]
  - Colletotrichum spp.* [B]



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- f. *Cristulariella* spp. (Zonate leafspot) [C]
- g. *Diplocarpon rosae* (Blackspot) [B]
- h. *Discula* spp. (Anthracnose) [A]
- i. *Fabraea maculata* (syn. *Entomsporium maculata*) [B]
- j. *Gnomonia leptostyla* (Anthracnose) [C]
- k. *Heterosporium echinulatum* [B]
- l. *Mycosphaerella caryigena* (Downy Spot) [C]
- m. *Mycosphaerella fructicola* (Greasy Spot) [E]
- n. *Septoria* spp. (Leaf Scorch) [C]
- o. *Spilocaea pyracanthae* [B]
- p. *Tubakia dryina* [D]
- q. *Venturia inaequalis* (Scab) [A]
- 4. Powdery Mildew
  - a. *Erysiphe* spp. [B]
  - b. *Microsphaera* spp. [C]
  - c. *Oldium* spp. [B]
  - d. *Podosphaera* spp. [B]
  - e. *Sphaerotheca pannosa* [B]
- 5. Rust
  - a. *Gymnosporangium juniperi-virginianae* [A]
  - b. *Melampsora occidentalis* [D]
  - c. *Phragmidium* spp. [B]
  - d. *Puccinia* spp. [B]
  - e. *Pucciniastrum goeppertianum* [D]
  - f. *Uromyces dianthi* [B]

**Table 3. Application Regimes**

- [A] Mix 2-4 fl. oz. of Armor Tech PPZ 143 in 100 gals. of water and apply as a full coverage spray to the point of drip. Apply every 14-21 days during the period of primary infection. If disease is present, tank mix with an EPA-registered contact fungicide. For flower blight, apply Armor Tech PPZ 143 when there is 5-10% bloom and again at 70-100% bloom. For dogwoods, apply the 2-4 fl. oz. rate every 14 days, or apply 8 fl. oz. of Armor Tech PPZ 143 every 28 days.
- [B] Mix 5-8 fl. oz. of Armor Tech PPZ 143 in 100 gals. of water and apply as a full coverage spray to the point of drip. Apply as needed, beginning when conditions are favorable for disease development. For blackspot, apply with a registered contact fungicide labeled for black spot. For Calendula, apply every 30 days. For dipodia tip blight, make 3 applications every 14 days prior to major period of infection. For juniper phomopsis blight, make first application as soon as junipers start to grow, and repeat the applications every 14-21 days during periods of active growth.
- [C] Mix 8-12 fl. oz. of Armor Tech PPZ 143 in 100 gals. of water and apply as a full coverage spray to the point of drip. Apply every 30 days beginning when conditions are favorable for disease development. For pecans, apply the 12 fl. oz. rate beginning at bud break. Apply 3 times on 14-day intervals. For walnut, apply 8.5 fl. oz. at 14- to 21-day intervals. For ray blight, apply 12 fl. oz. at 7-day intervals or 20 fl. oz. at 14-day intervals.
- [D] Mix 16 fl. oz. of Armor Tech PPZ 143 in 100 gals. of water and apply as a full coverage spray to the point of drip. Apply every 14-28 days, beginning when conditions are favorable for disease development. For Douglas fir needle rust, apply once in May. For tip blight, initiate applications in mid-late winter, and apply 3 times at 2-month intervals.
- [E] Mix 20-24 fl. oz. of Armor Tech PPZ 143 in 100 gals. of water and apply as a full coverage spray to the point of drip. Apply during June to August time period.

**DO NOT** apply to apple, cherry, citrus, nectarine, peach, pecan, plum, or walnut trees that will bear harvestable fruit within 12 months.

## A FLARE ROOT-INJECTED SYSTEMIC FUNGICIDE FOR CONTROL OF SELECTED DISEASES IN TREES

### General Information

Armor Tech PPZ 143 is a systemic fungicide for use as a flare root injection for prevention and treatment of (1) oak wilt (*Ceratocystis fagacearum*) of oaks (*Quercus* spp.), (2) Dutch elm disease (*Ophiostroma ulmi*) of elms (*Ulmus* spp.), (3) sycamore anthracnose (*Apiognomonia veneta*), and (4) leaf diseases (i.e., *Venturia inaequalis*, *Gymnosporangium juniperi-virginianae*, *Pucciniastrum goeppertianum*, etc.) of crabapple (*Malus* spp.). It is recommended that Armor Tech PPZ 143 be administered by trained arborists or others trained in injection techniques and in the identification of tree diseases.

**Notes:** The active ingredient in Armor Tech PPZ 143 has been shown to be safe on a wide range of plant species. Before using Armor Tech PPZ 143 on ornamental plants or for diseases that are not listed in the **DIRECTIONS FOR USE**, test Armor Tech PPZ 143 on a small-scale basis and evaluate for phytotoxicity and disease control prior to widespread use.

### Correct Location for Injector Placement

The flare root area is the transitional zone between the trunk and the root system. Uptake and distribution of Armor Tech PPZ 143 is more effective when injections are made into the flare roots. In addition, wounds created in the flare root area close more rapidly in comparison to wounds above the flare root area.

### Tree Preparation

1. Heavy, thick, or loose outer bark may be carefully shaved to form a smoother injection point and to ensure the operator that the drill hole penetrates through the bark to the xylem.
2. If the flare roots are not clearly exposed, carefully remove 2 to 4 inches of soil from the base of the tree to uncover the top of the flare roots. Brush away loose soil.
3. Drill holes through the bark, into sapwood, using a clean sharp drill bit. Drill hole diameter should be adequate to allow insertion of injection tees and formation of air

tight contact between active xylem and the delivery point of the injection tees.

Generally, a drill hole diameter of 7/32–5/16 inch for elms, sycamores, and crabapples, and 5/16 inch for oaks is appropriate. Follow manufacturer's instructions for the particular injection device used in the treatment. Drill hole depth should be adequate to deliver the product into active xylem tissue. Generally, 3/4 inch depth is appropriate, but trees with thick bark may require increased drill hole depth to reach the active xylem layer. Space injectors 3 to 6 inches apart around the base of the tree. **DO NOT** drill in the valleys between the flare roots or into cankered areas. Drill above these areas into the trunk, then continue again into sound sapwood on the flares.

4. Disinfect the drill bit between trees with household bleach (20% solution), ethanol, or other disinfectant. Rinse bit with clean water after disinfecting.
5. Insert into the drilled holes the injection ports ("tees") which are connected to plastic tubing. The tubing should have inlet and outlet valves.
6. Mix the specified amount of Armor Tech PPZ 143 and water thoroughly in the tank before beginning the injection treatment.

### Tree measurement

Measure the diameter of the tree using a tree diameter-tape (D-tape) at 4-1/2 feet above the ground. This is the diameter at breast height (DBH). If only a regular tape is available, measure the tree circumference and divide that number by 3.14. For crabapples, measure the diameter at the point where the tree begins to branch.

### Preparation of Injection Solution

Dilute 10 ml / 1/3 oz. of Armor Tech PPZ 143 in up to 1 liter/quart of water per inch DBH. Refer to the following table as an example of the amounts of Armor Tech PPZ 143 and water to use:

DBH Inches	Treatment Level (ml/oz.)	Water Volume* (liters/quarts)
5	50 ml / 1-2/3 oz.	5
10	100 ml / 3-1/3 oz.	10
15	150 ml / 5 oz.	15
20	200 ml / 6-2/3 oz.	20
25	250 ml / 8-1/3 oz.	25
30	300 ml / 10 oz.	30
35	350 ml / 11-2/3 oz.	35
40	400 ml / 13-1/3 oz.	40

\*Use up to amount indicated.

### Injection

For pressurized injections, with the outlet valve open, connect the tank to the inlet valve and begin pumping solution until all air bubbles come out of the outlet valve. Direct the solution into a container and return the solution to the tank. Shut off the outlet valve. Pressurize tank to 20 to 30 psi. Check for leaks and gently tap in tees if necessary. Maintain continuous pressure on the injection system until the full amount of solution is in the tree.

After injection is complete, remove injection tees and leave drill holes unplugged. A water flush to cleanse the hole will assist with wound closure. Soil should be replaced around the tree. It is not necessary to treat the drill holes with wound paint or other sealing compounds.

Contact your local extension agent for more details on tree injection. The injection system described is meant as an example; please refer to manufacturer's instructions when using other types of tree injection systems.

### Retreatment

At the initial injection of Armor Tech PPZ 143, take notes on the level of disease in each tree. Reevaluate disease level in trees at 12-month intervals after treatment for the potential need for retreatment with Armor Tech PPZ 143. Preventive applications should be considered 12 to 36 months after the initial injection. Trees in high disease risk areas or high value trees should be evaluated for possible retreatment 12 months after each treatment. Follow application procedures described above for repeat injections; new drill holes will be needed for subsequent treatments.

### OAK WILT: OAKS

#### Preventive and Therapeutic Treatment

Use 10 ml / 1/3 oz. of Armor Tech PPZ 143 in up to 1 liter/quart of water per inch DBH. For very high disease pressure, 20 ml / 2/3 oz. of Armor Tech PPZ 143 per inch DBH may be used.

In the upper Midwest, treat oaks after June 15. Wounds in oaks in the upper Midwest between May 15 and June 15 attract insects that transmit the oak wilt pathogen.

Oak trees exhibiting less than 20% crown loss from oak wilt have the best chance of responding to treatment by Armor Tech PPZ 143. Preventive application is more effective than therapeutic treatment. Trees in advanced stages of disease development may not respond to treatment.

Uninfected trees will generally absorb the full amount of Armor Tech PPZ 143 water solution within 2 hours when injected under pressure. Trees exhibiting specific symptoms or those symptomless trees immediately adjacent to a diseased tree should be considered infected. Symptomless trees separated by a primary plow line from diseased trees may be at less risk of infection. Infected trees will absorb the material more slowly due to the vascular plugging caused by the disease. If the Armor Tech PPZ 143 water solution is not absorbed within 24 hours, the tree is considered high risk and has a poor

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chance of survival.

See the **GENERAL INFORMATION** section for details on retreatment.

### LEAF DISEASES: CRABAPPLES

#### Preventive Treatment

Use 10 ml / 1/3 oz. of Armor Tech PPZ 143 in up to 1 liter/quart of water per inch trunk diameter. For trees less than 10 inches trunk diameter, use 6 ml / 1/5 oz. of Armor Tech PPZ 143 per inch trunk diameter. Make applications when the trees are in full leaf and actively growing for control of the next season's leaf disease development. Disease symptoms may not be reduced the year of application. **DO NOT** use fruit from treated trees for food or feed purposes.

See the **GENERAL INFORMATION** section for details on retreatment.

### ANTHRACNOSE: SYCAMORE

#### Preventive Treatment

Use 10 ml / 1/3 oz. of Armor Tech PPZ 143 in up to 1 liter/quart of water per inch DBH. For trees less than 10 inches DBH, use 6 ml / 1/5 oz. of Armor Tech PPZ 143 per inch DBH. Make applications when the trees are in full leaf and actively growing for control of the next season's anthracnose development.

See the **GENERAL INFORMATION** section for details on retreatment.

### DUTCH ELM DISEASE IN ELMs

#### Preventive and Therapeutic Treatment

Use 6 - 10 ml / 1/5 - 1/3 oz of Armor Tech PPZ 143 in up to 1 liter/quart of water per inch DBH. For very high disease pressure, 20 ml / 2/3 oz. of Armor Tech PPZ 143 per inch DBH may be used.

**Notes:** (1) Accurate diagnosis of Dutch elm disease is important since Armor Tech PPZ 143 only provides control of Dutch elm disease in elms. (2) Armor Tech PPZ 143 will be most effective when used in conjunction with other cultural practices recommended for management of Dutch elm disease (removal of dead elm trees, pruning of diseased tree limbs and branches, control of bark beetles, etc.) (3) Preventive applications can be made at 6 to 10 ml / 1/5-1/3 oz./inch DBH. The 6 ml / 1/5 oz. rate should provide 24 months control and the 10 ml / 1/3 oz. rate should provide 36 months control. (4) Therapeutic treatment in trees showing disease symptoms should be made at 10-20 ml/1/3 - 2/3 oz/inch DBH. Retreatment may be needed every 12 to 36 months. Trees in advanced stages of disease development may not respond to treatment. For further information on the proper diagnosis and control of Dutch elm disease, consult your local extension agent.

See the **GENERAL INFORMATION** section for details on retreatment.

### STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage or disposal.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

**CONTAINER STORAGE:** **DO NOT** reuse empty container. Triple rinse container (or equivalent), then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. Stay out of smoke from burning containers.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call CHEMTREC at 800-424-9300 day or night.

### WARRANTY STATEMENT

FarmSaver.com LLC warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of FarmSaver.com LLC. In no case shall FarmSaver.com LLC be liable for consequential, special, or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. In addition to the foregoing, no purchaser of this product (other than an end user) shall be entitled to any reimbursement for any loss suffered as a result of any suspension or cancellation of the registration for this product by the U.S. Environmental Protection Agency. Except as expressly provided herein, FarmSaver.com LLC makes no warranties, guarantees, or representations of any kind, either expressed or implied, or by usage of trade, statutory or otherwise, with regard to the product sold, including, but not limited to merchantability, fitness for a particular purpose, use or eligibility of the product for any particular trade usage. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall be damages not exceeding the purchase price paid for this product or, at FarmSaver.com LLC's election, the replacement of this product.

Quali-Pro is a trademark of FarmSaver.com, LLC

Unite is a registered trademark of Loveland Industries, Inc.

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# Product Guide



*Results. Expect it.™*



**Specialized Chemistry for Green Industries**

# Product Guide



*Results. Expect it.™*

PRECISION  
LABORATORIES



**Specialized Chemistry for Green Industries**

Product	Packaging	Use Rates	Description
<b>DEVOUR™</b> <i>Aquatic Waste and Sludge Reducer</i>	6 x ½ lb water-soluble packets per carton, 4 cartons per master case  120 x ½ lb water-soluble packets per drum	Initial: 3-6 lb/acre Maintenance: 1.5-2.0 lb/acre	Proprietary blend of enzymes, facultative and nonfacultative bacteria accelerates breakdown of partially decomposed organic matter.
<b>SPECTRUM™</b> <i>Aquatic Nutrient Metabolizer</i>	6 x ½ lb water-soluble packets per carton, 4 cartons per master case  120 x ½ lb water-soluble packets per drum	Initial: 3-6 lb/acre Maintenance: 1.5-2.0 lb/acre	Function specific formulation of select bacteria strains improves water quality by reducing nutrient levels and suspended organic matter in the water column.
<b>TRUE BLUE™ EZ SOLUPAK™</b> <i>Lake and Pond Dye</i>	6 x 5.25 oz SoluPaks per carton, 4 cartons per case	1 Pak/acre-foot or 325,000 gal	Proprietary blend of environmentally friendly, nontoxic dyes reduces sunlight penetration and imparts a natural blue color. Waterproof, foil-lined SoluPak prevents accidental staining.
<b>TRUE BLUE™</b> <i>Lake and Pond Dye</i>	6 x 1 gal containers per case	1 qt/acre-foot	
<b>JET BLACK™ EZ SOLUPAK™</b> <i>Lake and Pond Dye</i>	6 x 5.25 oz SoluPaks per carton, 4 cartons per case	1 Pak/acre-foot or 325,000 gal	Proprietary blend of environmentally friendly, nontoxic black dyes reduces sunlight penetration and imparts a natural black, reflective color. Waterproof, foil-lined SoluPak prevents accidental staining.
<b>JET BLACK™ LIQUID</b> <i>Lake and Pond Dye</i>	6 x 1 gal containers per case	20 oz/acre-foot	

## Spray Indicators

Product	Packaging	Use Rates	Description
<b>RUNWAY™</b> <i>Turf Marking Foam</i>	12 x 1 qt containers per case	3 oz/2 gal	Quick dissipating turf foam marker. Will not discolor sensitive turf like ordinary marking foams.
<b>SIGNAL™</b> <i>Blue Spray Pattern Indicator</i>	6 x 1 gal containers per case	1 qt/100 gal	Highly visible blue spray pattern indicator provides temporary visibility of applications. Waterproof, foil-lined SoluPak prevents accidental staining.
<b>SIGNAL™ BLUE EZ SOLUPAK™</b> <i>Blue Spray Pattern Indicator</i>	12 x 2 oz SoluPaks per carton, 4 cartons per master case	1 Pak/50 gal	Concentrated blue spray pattern indicator provides temporary visibility of spray applications.
<b>SUPER SIGNAL™ BLUE</b> <i>Blue Spray Pattern Indicator Concentrate</i>	12 x 1 qt containers per case 2 x 2.5 gal containers per case	16-32 oz/100 gal	
<b>SUPER SIGNAL™ GREEN</b> <i>Green Spray Pattern Indicator Concentrate</i>	12 x 1 qt containers per case	16-32 oz/100 gal	Concentrated green spray pattern indicator further reduces golfer awareness of applications compared to blue colorants.
<b>SIGNAL™ GREEN EZ SOLUPAK™</b> <i>Green Spray Pattern Indicator</i>	12 x 2 oz SoluPaks per carton, 4 cartons per master case	1 Pak/50 gal	Green spray pattern indicator further reduces golfer awareness of applications compared to blue colorants. Waterproof, foil-lined SoluPak prevents accidental staining.
<b>REPLACE™</b> <i>Permanent Divot Mix Colorant</i>	2 x 2.5 gal containers per case	6-12 oz/100 lb	Permanent colorant imparts long-lasting green color to sand when preparing divot mix.
<b>REGREEN™</b> <i>Permanent Turfgrass Colorant</i>	2 x 2.5 gal containers per case	Dormant Turf: 12 oz + 84-108 oz of water/1000 sq ft, or 4 gal + 31-35 gal of water/acre. Nondormant Turf: 1/2 pt + 7.5-10 pt of water/1,000 sq ft, or 2.75 gal + 40-54 gal of water/acre.	Non-phytotoxic colorant imparts long-lasting, natural color to dormant and non-dormant turfgrasses.

## Adjuvants

Product	Packaging	Use Rates	Description
<b>PEN-A-TRATE II™</b> <i>Premium Nonionic Surfactant</i>	6 x 1 gal containers per case	0.125-0.5% v/v or 1-4 pt/100 gal	Low-foaming, nonionic surfactant provides superior coverage and penetration of spray solutions on tough-to-control weeds.
<b>SYNC®</b> <i>Fungicide Activator</i>	12 x 16 oz bottles per case	1 pt/100 gal of spray solution	Unique, proprietary adjuvant technology enhances performance of contact and systemic fungicides, and lengthens disease control at reduced water volume on a wide variety of turf diseases.
<b>SPEED™</b> <i>Nonionic Siloxane Surfactant</i>	6 x 1 gal containers per case	Follow pesticide label. If no recommendations, use 6-13 oz/100 gal	Low-foaming, low-use rate, nonionic siloxane surfactant moves spray solution up and down plant for superior coverage.
<b>MICROYL™</b> <i>Crop Oil Replacement</i>	6 x 1 gal containers per case 2 x 2.5 gal containers per case	3-4 pt/100 gal	Activator adjuvant provides superior performance and improved turfgrass safety at lower use rates than ordinary crop oil concentrates.
<b>DELUX™</b> <i>Surfactant Plus Ammonium Sulfate Adjuvant</i>	2 x 2.5 gal containers per case	4-5 qt/100 gal with phenoxies. 5-10 qt/100 gal with Manage™ or glyphosate in 10-50 gal/acre.	Biodegradable activator surfactant and ammonium sulfate premix enhances performance of glyphosate and certain postemergence herbicides.
<b>CHEM-STIK™</b> <i>Nonionic Spreader Sticker</i>	6 x 1 gal containers per case	4-8 oz/100 gal	Nonionic spreader sticker maximizes leaf surface coverage of spray solutions, while providing washoff protection from untimely rainfall.
<b>BORDER™ EG</b> <i>Retention Aid / Drift Control</i>	12 x 25 oz containers per case	Ground: 10 oz/100 gal Aerial: 20 oz/100 gal	Granular nonionic deposition agent and drift retardant eliminates mixing, measuring and handling problems, while maximizing pesticide performance by increasing deposition and coverage on hard-to-wet leaf surfaces.
<b>DIRECT™</b> <i>Drift Retardant</i>	12 x 1 qt containers per case	1-4 oz/100 gal	Drift retardant reduces drift risk and maximizes pesticide performance by binding ultra small spray particles into larger droplets.
<b>NEW BALANCE™</b> <i>pH Acidifier Surfactant</i>	6 x 1 gal containers per case	See product label.	Citric-based, pH acidifier, buffer and nonionic surfactant modifies spray solution pH when breakdown from alkaline hydrolysis can reduce insecticide and fungicide performance.
<b>CONVERT™</b> <i>Compatibility Agent &amp; Buffer</i>	2 x 2.5 gal containers per case	4-5 pt/100 gal	Tank mix compatibility agent eliminates problems with mixing fertilizer solutions or suspension fertilizers with emulsifiable concentrates and flowable pesticides.
<b>TRANSPORT ULTRA™</b> <i>Water Conditioning NIS</i>	2 x 2.5 gal containers per case	1-2 qt/100 gal	Combination of nonionic surfactant, water conditioning agents and ammonium ions replaces the need for ammonium sulfate with weak acid herbicides such as glyphosate, dicamba and phenoxies.



# Maintenance Chemistry

Product	Packaging	Use Rates	Description
<b>KNOCKDOWN™</b> <i>Foam Suppressant</i>	12 x 1 qt containers per case 6 x 1 gal containers per case	1-4 oz/100 gal	Foam suppressant quickly defoams spray solutions containing nonionic surfactants, silicone surfactants or crop oil concentrates.
<b>INCIDE-OUT™</b> <i>Spray Tank Cleaner</i>	12 x 1 qt containers per case 4 x 1 gal containers per case	1 qt/100 gal of clean water rinsate	Liquid spray tank cleaner emulsifies and bonds pesticide residues to rinse water for complete purging.
<b>REDURAN®</b> <i>Dye Remover - Skin &amp; Clothing</i>	50 x 3.38 oz tubes per case	Rub into skin. Wipe or rinse off.	Cleaner removes stains caused by marking foam dyes, spray pattern indicators, lake and pond dyes, and pesticides.

**Important:** Read and follow all label directions before using any product.

All products are trademarks or registered trademarks of their respective companies.

## Integrity, Quality, Value and Service

These principles continue to guide our company. Integrity drives our relationships and the commitments we make. Quality and value defines every innovation and formulation we've developed. Our products are designed to deliver superior performance and optimum value with every application. Our unparalleled dedication to long-term relationships and service has provided our customers with guaranteed satisfaction for more than 45 years.

Our company tag line, 'Results. Expect it.', accurately captures our culture. We expect to deliver more overall value to our customers and we expect the same from our team members.

## Guarantee

Precision Laboratories is recognized as having the highest level of customer service. We guarantee the integrity and quality of every product we sell and provide 24-hour technical assistance to ensure complete customer satisfaction. Our products are backed by university and independent research, and proven through field-testing by respected turf and ornamental professionals.

For more information or to find your Precision Laboratories distributor, contact us:

Product information (7:30 a.m. - 4:30 p.m. CT): (800) 323-6280

24-hour technical assistance: (800) 323-8351

Email: [info@precisionlab.com](mailto:info@precisionlab.com)

Web: [www.precisionlab.com](http://www.precisionlab.com)

*Precision Laboratories is a leading provider of specialized chemistries applied to plants, seeds, soil and water to maximize resource and biological performance potential while stewarding the environment.*





#### NONPLANT FOOD INGREDIENT

#### VARIABLE RATE SOIL SURFACTANT

#### ACTIVE INGREDIENTS:

Proprietary blend of surfactants ... 100%

#### CAUTION: KEEP OUT OF REACH OF CHILDREN

#### PRECAUTIONARY STATEMENTS

Before using this product, read the entire label, including conditions of sale. May cause irritation to skin and eyes. Ingestion of large amounts may cause mucosal irritation, dizziness, nausea and possible vomiting.

#### STATEMENT OF PRACTICAL TREATMENT

**If Swallowed:** Give large amounts of water to drink. Do not induce vomiting. Seek medical attention immediately.

**If Inhaled:** Move user to fresh air and seek medical attention.

**If In Eyes:** Flush with water for 15 minutes. Seek medical attention.

**If On Skin:** Remove contaminated clothing. Wash skin contact area with plenty of soap and water.

#### GENERAL INFORMATION

RADIUS is a unique soil surfactant system formulated to allow golf course superintendents to control their water management strategy. RADIUS allows turf managers to select a use rate that gives them the performance they need for the period of time that they want. Radius has been proven effective in both constructed and native soil situations.

RADIUS is suitable for use on golf course greens, tees, fairways and roughs, or on other fine turf areas.

#### DIRECTIONS FOR USE

To improve performance and avoid the risk of temporary leaf tip discoloration caused by certain environmental conditions that may exist at application, apply RADIUS using the application techniques described below.

#### APPLICATION TECHNIQUES

Under hot or dry conditions, pre-wet the turfgrass with at least two turns of the irrigation heads or approximately .10 inches of water, to reduce the concentration of RADIUS on the leaf surface.

Following application, irrigate for 10-20 minutes to move Radius into the root zone. If localized dry spot is present at the time of application, use the longer irrigation time.

#### APPLICATION RATES

For efficacy up to 30 days, apply RADIUS at the rate of 4 fluid ounces in 2 to 3 gallons of water per 1000 square feet.

For efficacy up to 45 days, apply RADIUS at the rate of 6 fluid ounces in 2 to 3 gallons of water per 1000 square feet.

For efficacy up to 60 days, apply RADIUS at the rate of 8 fluid ounces in 2 to 3 gallons of water per 1000 square feet.

#### TANK MIXING

Unless prior experience has proven the combination to be effective, compatible and safe on the desired turf species, it is not recommended that Radius be tank mixed with other pesticides, fertilizers, micronutrients, bio-stimulants or the like.

#### STORAGE AND DISPOSAL

Protect product from freezing. If product freezes, warm to room temperature before use. Store in original container only and do not reuse empty container. Rinse container thoroughly, disposing of rinsate and the container in accordance with federal, state and local regulations.

#### CONDITIONS OF SALE

Read the information contained herein before buying or using this product. If the stated terms are unacceptable, return the product at once, unopened. It is critical that this product be used and mixed only as specified on this label. Neither the manufacturer nor the seller makes any representation or warranty, expressed or implied, with respect to the results from the use of this material. Buyer and user assume all risks of use and/or handling. Precision Laboratories, Inc. warrants that this material is reasonably fit for use as specified on this label. No agent or representative is authorized to make any other representations concerning this material. Unforeseen factors beyond Precision's control prevent elimination of risks in connection with the use of its chemicals. Such risks include, but are not limited to, damage to plants and/or crops to which the material is applied, or lack of complete control and damage caused by drift to other plants or crops. Such risks may occur even though the product is reasonably fit for use as stated hereon and even though label directions are followed. Follow directions carefully. Timing, mixture, method of application, weather and other conditions are influencing factors in the use of this product and are beyond the control of the seller. Except to the extent prohibited by applicable law, the exclusive remedy of the user or buyer and the limit of liability of the Company or any other seller for any and all losses, personal injuries or damages resulting from the use of this product shall be the purchase price paid by the user or buyer for the quality of the product involved.

# S P E C I M E N L A B E L

© PRECISION LABORATORIES, INC. Waukegan, IL 60085 USA

For 24-hour technical assistance when using this product in the USA and Canada, call: 1-800-323-8351

For 24-hour emergency service when using this product in the USA and Canada, call CHEMTREC: 1-800-424-9300

Radius is a trademark of Precision Laboratories, Inc.

9/15/06



1429 S. Shields Drive  
Waukegan, IL 60085  
847 596 3001  
www.precisionlab.com





## A Variable-Rate Soil Surfactant

Environmental conditions, cultural practices and turfgrass Cultivars all team up to make virtually every course unique... and professional superintendents know it!



*That's why we developed RADIUS.*

**RADIUS** is a unique soil surfactant system formulated to put superintendents back in control of their water management strategy. RADIUS allows turf managers to select a use rate that gives them the performance they need for the period of time they want. RADIUS is effective in both constructed and native soil situations.

### **Variable Rate Technology Puts You in Control**

One product with lots of options, RADIUS' unique use-rate structure allows superintendents to select performance periods of anywhere from 30 to 60 days, matching up with their seasonal labor and water management strategies.

### **Maximizes Irrigation Efficiency**

RADIUS maximizes irrigation and natural precipitation by improving uniform penetration and distribution of moisture in the soil profile. Even in severe situations, RADIUS can help ensure higher quality, more playable surfaces with less effort.

### **Distributed By:**

### **Performance You Can Count On**

RADIUS is a product of Precision Laboratories, a leading manufacturer of "Best of Class" products for the turf, ornamental and aquatic industries, so you know that Radius will give you proven product performance.

### **Prevents Localized Dry Spot**

RADIUS is highly effective in controlling localized dry spot, (LDS). RADIUS attaches itself to the hydrophobic coating that has built up on soil particles to effectively counteract the effects of LDS for extended periods of time.

### **Consistent Playability**

RADIUS' technologies and your cultural practices make the perfect team to maximize turfgrass quality and playability across a wide range of weather conditions.

### **Packaging**

For your convenience, RADIUS is packaged in 2.5 gallon containers and 20 gallon and 55 gallon drums.

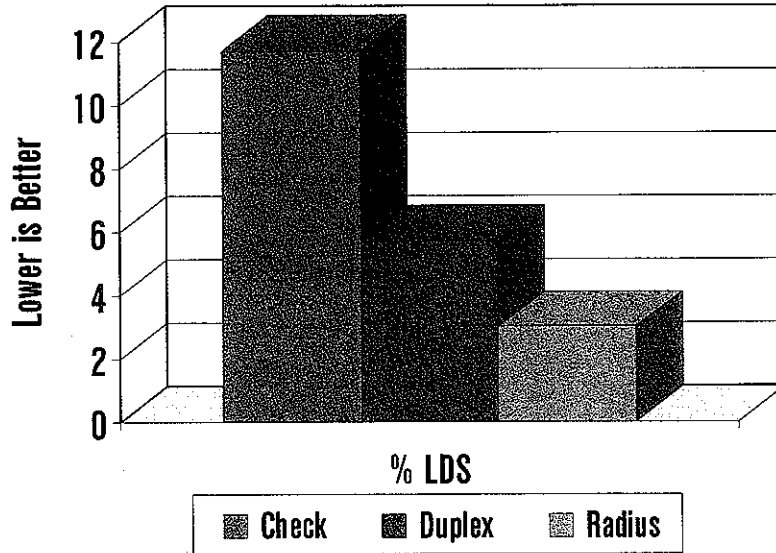
RADIUS™ is a trademark of Precision Laboratories, Inc. Waukegan, IL 60085

The logo for Precision Laboratories, Incorporated, features a stylized green leaf above the word "PRECISION" in a bold, sans-serif font. Below "PRECISION" is "LABORATORIES, INCORPORATED" in a smaller font.

LABORATORIES, INCORPORATED  
1429 S. Shields Drive  
Waukegan, IL 60085  
Ph: (847) 596-3001 Fx: (847) 596-3017  
Web: [www.precisionlab.com](http://www.precisionlab.com)  
E-Mail: [info@precisionlab.com](mailto:info@precisionlab.com)

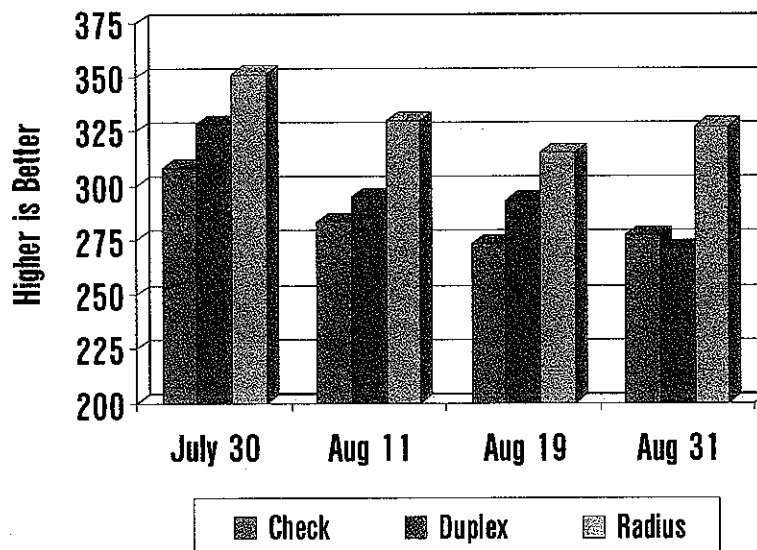
## Reduction of LDS

Dr. Cale Bigelow, Purdue University



## Canopy Greenness

Dr. Cale Bigelow, Purdue University



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**Specialized Chemistry for Resource Management**

# Radius™ - Variable-Rate Soil Surfactant



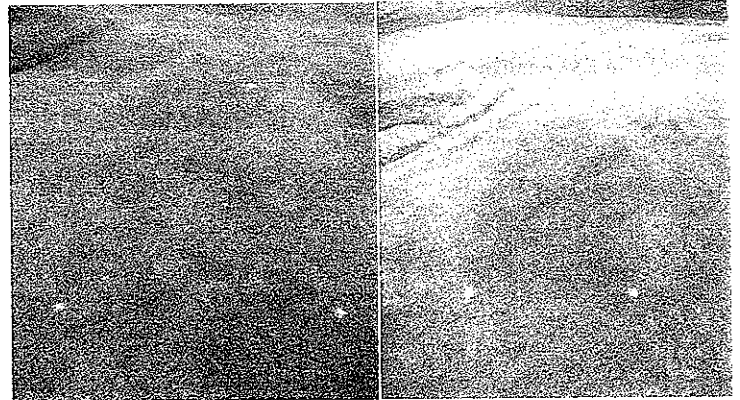
*Results. Expect it.*

## PROVEN PERFORMANCE

Radius™ allows golf course superintendents to select a use-rate that gives them the performance they need for the period of time they want.

## BENEFITS:

- Both cures and prevents LDS.
- Does not require immediate irrigation.
- Compatible with most pesticides.
- Flexible rates and timing of application.



Purdue Summer Intern Project - 2009

## VARIABLE-RATE TECHNOLOGY

Select performance periods from 30 to 90 days, matching up with seasonal labor and water management strategies.

## PREVENTS OR CURES LOCALIZED DRY SPOT

In a study at Purdue University, Radius showed less Localized Dry Spot and turf stress.

## UNIFORM WATER INFILTRATION

Laboratory results showed uniformed water absorption into the soil column in various soil types. This allows for use on both USGA and native soils.

## MAXIMIZES IRRIGATION EFFICIENCY

Radius improves penetration and distribution of moisture in the soil profile. Even in severe situations, Radius can help ensure higher quality and more playable surfaces. Studies show a significant reduction of surface tension of water.

## TANK MIX COMPATIBLE

Radius has been successfully tank mixed with several combinations of products. Although all wetting agents work best when watered in, Radius has been applied and allowed to dry on the turf, followed by watering in later that evening.

APPLICATION RATES	
4 ounces	30 days
6 ounces	45 days
8 ounces	60 days
Variable-Rate Technology™	



**Specialized Chemistry for Resource Management**

# Pentathlon<sup>®</sup> DF

FUNGICIDE



## DISPERSIBLE GRANULES

### ACTIVE INGREDIENTS

### BY WEIGHT

A coordination product of zinc ion and manganese ethylene-bisdithiocarbamate .....	75%
in which the ingredients are:	
Manganese++ .....	15.0%
Zinc++ .....	1.9%
Ethylene bisdithiocarbamate ion (C <sub>4</sub> H <sub>6</sub> N <sub>2</sub> S <sub>4</sub> ) <sup>-</sup> .....	58.1%

### INERT INGREDIENTS

25%

### TOTAL

100%

Contains 0.75 Pound of Mancozeb Per Pound of Product

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

#### FIRST AID

<b>IF IN EYES</b>	Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
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#### HOTLINE NUMBER

For medical emergencies involving this product, call toll free 1-888-324-7598.

See Label for Additional Precautions and Directions for Use

GCN 021502 CPC 060615

**GRIFFIN L.L.C.**  
VALDOSTA, GA 31601

## Specimen Label

EPA REG. NO. 1812-414

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**  
**CAUTION**

MAY IRRITATE EYES, NOSE, THROAT AND SKIN. MAY BE HARMFUL IF ABSORBED THROUGH SKIN, INHALED OR SWALLOWED. Avoid breathing dust or spray mist. Avoid contact with skin, eyes and clothing. Keep away from fire or sparks.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical-resistance category selection chart.

Applicators and other handlers (other than mixers and loaders) must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks

Mixers and Loaders must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear
- Chemical-resistant apron when mixing or loading

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering control statements:

When handlers use enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

During aerial application, human flaggers must be in enclosed cabs.

**USER SAFETY RECOMMENDATIONS**

**USERS SHOULD:**

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove personal protective equipment immediately after handling this product.
- Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**ENVIRONMENTAL HAZARDS**

This product is toxic to fish. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Cover or incorporate spilled treated seed. Do not contaminate water by disposing of equipment washwaters.

**DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks

**NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Commercial seed treatments and professional applications to lawn grasses, golf courses, industrial (office park), municipal and residential lawns are not within the scope of the Worker Protection Standard.

Do not enter treated areas until sprays have dried.

## STORAGE AND DISPOSAL

**STORAGE: Important** – Never allow Pentathlon DF to become wet during storage. This may lead to certain chemical changes which will reduce the effectiveness of Pentathlon DF as a fungicide and create vapors which may be flammable. Keep container closed when not in use. Store product in original container only, away from pesticides, fertilizer, food or feed.

**PRODUCT DISPOSAL:** Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:** Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Griffin will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by Griffin. User assumes all risks associated with such nonrecommended use.

Pentathlon DF, a dispersible granule containing mancozeb, is recommended for use as a spray for the control of many important plant diseases.

## APPLICATION INSTRUCTIONS

**AS A SPRAY** (Ground or Aerial Equipment) - Apply Pentathlon DF at the rate shown; use sufficient water to provide thorough coverage, use 20 to 100 gallons per acre for ground equipment and no less than 2 gallons per acre for aircraft. Add Pentathlon DF slowly to water in the spray tank with agitation, or premix thoroughly in separate holding tank for concentrate or aircraft sprayers. Continuous agitation is required to keep the product in suspension. A spreader-sticker spray adjuvant may be used with this product if needed; contact your local product distributor or Griffin representative for specific recommendations.

## RESTRICTIONS

### Foliar Applications

**Where EBDC Products Used Allow the Same Maximum Poundage of Active Ingredient Per Acre Per Season**

If more than one product containing an EBDC active ingredient (maneb, mancozeb or metiram) is used on a crop during the same growing season and the EBDC products used allow the same maximum poundage of active ingredient per acre per season, then the total poundage of all such EBDC products used must not exceed any one of the specified individual EBDC product maximum seasonal poundage of active ingredient allowed per acre.

**Where EBDC Products Used Allow Different Maximum Poundage of Active Ingredient Per Acre Per Season**

If more than one product containing an EBDC active ingredient is used on a crop during the same growing season and the EBDC products used allow different maximum poundage of active ingredient per acre per season, then the total poundage of all such EBDC products used must not exceed the lowest specified individual EBDC product maximum seasonal poundage of active ingredient allowed per acre.

## CHEMIGATION

Apply Pentathlon DF Fungicide only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation systems. Do not apply Pentathlon DF through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service Specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

## Specific Instructions for Public Water Systems:

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

## Specific Instructions for Sprinkler Irrigation Systems:

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Good agitation is required in the injection tank.
9. In moving systems, apply specified dosage of Pentathlon DF as a continuous injection. In nonmoving systems inject Pentathlon DF for 15 to 30 minutes at end of cycle. Use the least amount of water possible consistent with uniform coverage.
10. Mix the amount of Pentathlon DF needed for acreage to be treated into the quantity of water determined during prior calibration. For moving systems inject into the system continuously for one complete revolution of the field. For nonmoving systems inject into system for the time established during calibration.
11. Stop injection equipment after treatment is completed and continue to operate irrigation equipment until all Pentathlon DF is flushed from system.

## FLOWERS, FOLIAGE PLANTS, AND ORNAMENTALS

**NOT INTENDED FOR USE ON FRUIT TREES BY HOMEOWNERS.**

**TREATED PLANTS MUST NOT BE USED FOR FOOD OR FEED PURPOSES.**

Apply in the field, nursery or greenhouse as a thorough coverage spray, using 1 to 2 pounds Pentathlon DF per acre (1½ to 3 teaspoons per gallon). Plant sensitivities to Pentathlon DF have been found to be acceptable in specific genera and species listed on this label, however, phototoxicity may occur. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test each one for sensitivity to Pentathlon DF. Neither the manufacturer or seller has determined whether or not Pentathlon DF can be safely used on ornamental or nursery plants not listed on this label. The user should determine if Pentathlon DF can be used safely prior to commercial use. In a small area, apply the recommended rates to the plants in question, i.e. bedding plants, foliage, etc., and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use. Use Pentathlon DF in commercial greenhouses and nurseries for control of fungal diseases of flowers, foliage and ornamentals.

**Aerial Application:** For aerial applications made to field-planted ornamentals, apply 1 to 2 pounds per acre; a minimum rate of 5 gallons of spray per acre should be used during aerial applications.

**Application of Dilute Sprays:** Apply as thorough coverage spray using using 1 to 2 pounds per acre or 1 to 2 pounds per 100 gallons of water. Begin application at first sign of disease and repeat at 7 to 10 day intervals or as needed; use shorter interval during periods of frequent rains or when severe disease conditions persist. Pentathlon DF may be used alone or in combination with other fungicides as a maintenance spray. Use higher rate and shorter intervals during periods of excessive wetness and rapid plant growth.

Pentathlon DF is recommended for use on certain flower, foliage and ornamental plants listed in the table below for control of the following diseases and pathogens:

PLANT	PATHOGEN CONTROLLED
Abutilon	Alternaria, Cercospora, Cladosporium, Colletotrichum, Puccinia
African Villoet	Alternaria, Botrytis
Ageratum	Alternaria, Sclerotium, Rhizoctonia, Puccinia
Aglaonema	Alternaria
Almond, Ornamental	Botrytis, Cladosporium, Coryneum, Gloeosporium, Monilinia
Alyssum	Microsphaera alni
Andromeda	Exobasidium, Rhytisma, Venturia
Anthurium	Colletotrichum, Gloeosporium
Apple	Alternaria, Cephalosporium, Colletotrichum, Coryneum, Elsinoe, Fusarium, Gloeosporium, Gymnosporangium, Helminthosporium, Leptosphaeria, Monilinia, Monochaetia, Mycosphaerella, Pestalotia, Venturia
Arborvitae	Alternaria, Botrytis, Cercospora, Coryneum, Lophodermium, Mycosphaerella, Pestalotia
Ash	Cercospora, Cylindrosporium, Gloeosporium, Puccinia, Rhizoctonia, Sphaeropsis
Ash, Mountain	Gymnosporangium
Aster	Alternaria, Ascochyta, Botrytis, Colletotrichum, Fusarium, Phomopsis, Phyllosticta, Ramularia, Rhizoctonia, Septoria, Puccinia, Uromyces
Acuba japonica	Alternaria, Cercospora, Gloeosporium, Phomopsis, Phyllosticta
Azalea	Alternaria, Botrytis, Cladosporium, Colletotrichum, Cylindrocladium, Ovulinia
Baby's Breath	Botrytis, Rhizoctonia
Basswood	Cercospora, Phyllosticta
Begonia	Botrytis, Gloeosporium, Cercospora, Rhizoctonia
Birch	Cylindrosporium, Gloeosporium, Glomerella, Melampsoridium, Taphrina
Bougainvillea	Colletotrichum
Boxwood	Fusarium, Volutella
Buckeye	Cercospora, Glomerella, Guignardia, Monochaetia, Phyllosticta, Septoria, Taphrina
Buffalo Berry	Cylindrosporium, Puccinia, Rhizoctonia, Septoria
Catalpa	Alternaria, Cercospora, Gloeosporium, Phomopsis, Rhizoctonia
Camellia	Botrytis, Cercospora, Elsinoe, Exobasidium, Glomerella, Pestalotia, Phomopsis, Phyllosticta
Carnation	Alternaria, Botrytis, Cladosporium, Colletotrichum, Fusarium, Helminthosporium, Septoria, Stemphylium, Uromyces
Cedar	Lophodermium, Gymnosporangium
Cherry, Ornamental	Alternaria, Cercospora, Cladosporium, Coccoomyces, Coryneum, Fusicladium, Monilinia, Phomopsis, Phyllosticta, Taphrina
Chinese Evergreen	Colletotrichum, Gloeosporium
Christmas cactus	Alternaria, Cercospora, Colletotrichum, Fusarium, Phomopsis
Chrysanthemum	Alternaria, Ascochyta, Bipolaris, Botrytis, Cercospora, Cylindrosporium, Helminthosporium, Phyllosticta, Septoria, Stemphylium
Cockscomb (Celosia)	Alternaria, Cercospora
Coleus	Alternaria, Botrytis, Phyllosticta
Columbine	Botrytis, Rhizoctonia, Ascochyta, Cercospora, Septoria, Puccinia
Cordylone	Cercospora
Cotoneaster	Cercospora, Phyllosticta, Venturia
Crabapple	Marssonina, Phyllosticta, Septoria, Gymnosporangium, Venturia
Crepe myrtle	Cercospora, Phomopsis, Phyllosticta
Croton	Gloeosporium
Cyclamen	Botrytis, Cladosporium, Fusarium, Glomerella, Phyllosticta, Ramularia
Cypress	Coryneum, Fusarium, Gymnosporangium, Lophodermium, Monochaetia, Pestalotia, Phomopsis
Dahlia	Alternaria, Botrytis, Fusarium, Rhizoctonia

<b>PLANT</b>	<b>PATHOGEN CONTROLLED</b>
Daisy	Botrytis, Cercospora, Whetzelia
Daisy, Shasta	Cylindrosporium, Septoria, Fusarium
Daisy, Transvall	Alternaria, Botrytis, Gloeosporium
Daylily	Alternaria, Botrytis, Cercospora, Colletotrichum, Phomopsis, Phyllosticta, Puccinia
Delphinium	Ascochyta, Botrytis, Cercospora, Diaporthe, Fusarium, Phyllosticta, Puccinia, Ramularia, Septoria, Volutella
Dieffenbachia	Cephalosporium, Colletotrichum, Gloeosporium, Glomerella, Leptosphaeria
Dogwood	Ascochyta, Botrytis, Cercospora, Colletotrichum, Elsinoe, Phyllosticta, Septoria
Dracaena	Alternaria, Cercospora, Colletotrichum, Fusarium, Phyllosticta
Dusty Miller	Fusarium, Puccinia
Elm	Botryosphaeria, Cephalosporium, Cercospora, Coryneum, Cylindrosporium, Fusarium, Gloeosporium, Monochaetia, Mycosphaerella, Phomopsis, Phyllosticta, Rhizoctonia, Sphaeropsis, Taphrina
Euonymus	Cercospora, Colletotrichum, Gloeosporium, Marssonina, Ramularia, Septoria, Whetzelia
Fatsia	Alternaria, Cercospora, Colletotrichum, Phyllosticta
Fern	Botrytis, Cercospora, Curvularia, Cylindrosporium, Glomerella, Phyllosticta, Taphrina
Ficus	Alternaria, Ascochyta, Cephalosporium, Cercospora, Cladosporium, Colletotrichum, Fusarium, Gloeosporium, Glomerella, Mycosphaerella, Phomopsis, Stemphylium
Fir (Abies)	Cephalosporium, Phomopsis, Sphaeropsis, Lophodermium, Melampsora
Fir, Douglas	Phaeocryptopus
Fir, Frasier	Phaeocryptopus
Firethorn	Fusarium, Fusicladium, Rhizoctonia
Fittonia	Rhizoctonia
Four-O'clock	Cercospora, Rhizoctonia
Fuchsia	Botrytis, Phomopsis, Septoria
Garden Balsam	Alternaria, Botrytis, Cercospora
Gardenia	Alternaria, Botrytis, Diaporthe, Mycosphaerella, Pestalotia, Phomopsis, Phyllosticta, Rhizoctonia
Geranium	Alternaria, Ascochyta, Bipolaris, Botrytis, Cercospora, Cylindrosporium, Helminthosporium, Puccinia, Ramularia, Rhizoctonia, Septoria, Uromyces, Venturia
Gladiolus*	Alternaria, Botrytis, Cladosporium, Curvularia, Rhizoctonia, Septoria, Stemphylium
Gloxinia	Botrytis, Colletotrichum
Gold Dust Tree	Gloeosporium, Glomerella, Pestalotia, Phyllosticta
Gomphrena	Cercospora
Gypsophila	Botrytis, Rhizoctonia
Hawthorn	Cercospora, Cylindrosporium, Gloeosporium, Gymnosporangium, Monilinia, Mycosphaerella, Phyllosticta, Septoria, Venturia
Hemlock, Eastern (Tsuga)	Botrytis, Cylindrosporium, Melampsora, Rhizoctonia
Hibiscus	Alternaria, Cercospora, Colletotrichum, Fusarium, Phyllosticta
Hickory	Cercospora, Cladosporium, Elsinoe, Fusarium, Gnomonia, Mycosphaerella, Pestalotia, Phyllosticta, Septoria
Holly	Phyllosticta
Hollyhock	Alternaria, Ascochyta, Cercospora, Colletotrichum, Puccinia, Septoria
Honeysuckle	Alternaria, Cercospora, Gloeosporium, Herposbasidium, Phyllosticta
Horse Chestnut	See Buckeye
Hydrangea	Ascochyta, Botrytis, Cercospora, Colletotrichum, Phyllosticta, Rhizoctonia, Septoria
Impatiens	Cercospora, Phyllosticta, Rhizoctonia, Septoria
Indian Hawthorn	Entomosporium
Iris	Ascochyta, Botrytis, Cladosporium, Fusarium, Kabatiella, Phyllosticta, Puccinia, Rhizoctonia
Ivy	Colletotrichum, Glomerella, Phyllosticta, Ramularia, Sphaeropsis, Cladosporium, Rhizoctonia
Jade Plant	Gloeosporium, Phomopsis
Juniper	Cercospora, Coryneum, Gymnosporangium, Lophodermium, Pestalotia, Phomopsis, Stigmina
Kalanchoe	Cercospora, Stemphylium
Larkspur	See Delphinium
Laurel, Cherry	Alternaria, Cercospora, Coccomyces, Monilinia, Phyllosticta, Septoria
Laurel, Mountain	Cercospora, Mycosphaerella, Pestalotia, Phomopsis, Rhytisma, Septoria
Lavender, Cotton	Septoria
Lilac	Botrytis, Cercospora, Cladosporium, Cylindrocladium, Gloeosporium
Lily	Botrytis, Cercospora, Cladosporium, Colletotrichum, Fusarium, Puccinia, Ramularia, Rhizoctonia
Litrope	Alternaria, Cercospora, Colletotrichum, Leptothyrium
Lobelia	Botrytis, Cercospora, Puccinia, Rhizoctonia, Septoria
Loquat	Colletotrichum, Fusicladium, Pestalotia, Phyllosticta, Septoria
Magnolia	Alternaria, Cercospora, Cladosporium, Colletotrichum, Glomerella, Rhizoctonia
Mahonia	Cercospora, Cylindrocladium, Gloeosporium, Leptosphaeria, Phomopsis, Phyllosticta, Puccinia



PLANT	PATHOGEN CONTROLLED
Maple	Alternaria, Cercospora, Ciborinia, Fusarium, Marssonina, Monochaetia, Phomopsis, Phyllosticta, Rhizoctonia, Rhytisma, Septoria, Sphaeropsis, Taphrina, Venturia
Mexican Heather (Cuphea)	Gloeosporium, Rhizoctonia
Myrtle	Cercospora, Glomerella, Pestalotia
Narcissus	Botrytis, Sclerotinia
Nasturtium	Botrytis, Cercospora, Puccinia
Nannyberry	Botrytis, Cercospora, Cladosporium, Helminthosporium, Monochaetia, Phomopsis, Phyllosticta, Ramularia
Nephtytis	Cephalosporium
Nicotiana	Alternaria
Nierembergia	Botrytis
Oak	Cephalosporium, Cercospora, Cladosporium, Cronartium, Elsinoe, Fusarium, Gloeosporium, Gnomonia, Marssonina, Phyllosticta, Septoria, Taphrina, Venturia
Orchid	Cercospora, Fusicladium, Mycosphaerella, Phyllosticta, Puccinia, Septoria
Osmanthus	Alternaria, Cercospora, Colletotrichum, Phyllosticta
Pachysandra	Cronartium, Gloeosporium, Phyllosticta, Septoria, Sphaeropsis, Volutella
Palm, Areca	Alternaria, Cercospora, Colletotrichum, Phomopsis, Phyllosticta, Septoria
Palm, Arenga	Cercospora, Colletotrichum, Cylindrocladium, Pestalotia, Phoma, Stigmata
Palm, Cabbage	Fusarium, Gloeosporium, Pestalotia, Stigmata
Palm, Coconut	Pestalotia
Palm, Date	Alternaria, Fusarium, Helminthosporium, Pestalotia
Palm, King	Alternaria, Fusarium, Helminthosporium, Pestalotia, Phomopsis
Palm, Phoenix	Alternaria, Cercospora, Fusarium, Gloeosporium, Pestalotia, Phomopsis, Stigmata
Palm, Queen	Glomerella, Septoria
Palm, Royal	Alternaria, Cercospora, Colletotrichum, Helminthosporium
Palm, Washington	Cercospora, Colletotrichum, Cylindrocladium, Pestalotia, Phoma, Stigmata
Pansy	Alternaria, Botrytis, Cercospora, Colletotrichum, Peronospora, Phyllosticta, Ramularia, Rhizoctonia
Peach	Cercospora, Cladosporium, Coryneum, Fusarium, Glomerella, Monilinia, Mycosphaerella, Phomopsis, Phyllosticta, Taphrina
Pear	Alternaria, Botrytis, Cercospora, Cladosporium, Coryneum, Elsinoe, Fusarium, Glomerella, Gymnosporangium, Helminthosporium, Monilinia, Mycosphaerella, Phomopsis, Phyllosticta, Venturia
Peony	Alternaria, Botrytis, Cercospora, Cladosporium, Gloeosporium, Phyllosticta, Septoria
Peperomia	Colletotrichum, Gloeosporium, Rhizoctonia
Periwinkle	Alternaria, Botrytis, Cladosporium, Colletotrichum, Phomopsis, Phyllosticta, Puccinia, Rhizoctonia, Septoria
Petunia	Cercospora, Puccinia, Rhizoctonia, Stemphylium
Philodendron	Gloeosporium, Colletotrichum
Phlox	Botrytis, Colletotrichum, Ascochyta, Cercospora, Phyllosticta, Puccinia, Septoria, Ramularia, Stemphylium, Volutella
Photinia	Cercospora, Gloeosporium, Gymnosporangium, Lophodermium, Pestalotia, Phyllosticta, Septoria
Pieris	Alternaria, Pestalotia, Phyllosticta, Rhytisma
Pilea	Alternaria, Botrytis, Cercospora, Colletotrichum, Helminthosporium, Phyllosticta
Pine, Norfolk Island	Botrytis, Colletotrichum, Cronartium, Cylindrocladium, Fusarium, Lophodermium, Pestalotia, Rhizoctonia, Septoria, Sirococcus
Pine	Alternaria, Botrytis, Cronartium, Fusarium, Lophodermium, Monochaetia, Rhizoctonia, Septoria, Sirococcus
Pittosporum	Alternaria, Cercospora, Gnomonia, Mycosphaerella, Phyllosticta, Rhizoctonia, Septoria
Plane Tree	Cercospora, Gnomonia, Phyllosticta, Septoria
Plum, Ornamental	Botrytis, Cercospora, Cladosporium, Coccomyces, Coryneum, Monilinia, Phyllosticta, Taphrina
Poinsettia**	Botrytis, Cercospora, Fusarium, Uromyces
Poplar	Cercospora, Ciborinia, Colletotrichum, Cylindrocladium, Fusarium, Marssonina, Melampsora, Mycosphaerella, Phyllosticta, Septoria, Stigmata, Taphrina, Venturia
Portulaca	Rhizoctonia
Pothos	Rhizoctonia
Prayer plant	Alternaria, Drechslera, Glomerella, Puccinia
Primrose	Alternaria, Botrytis, Colletotrichum, Mycosphaerella, Puccinia, Ramularia, Uromyces
Privet	Cercospora, Glomerella, Phomopsis, Phyllosticta, Ramularia
Protea	Botrytis
Pyracantha	Botrytis, Cercospora, Diplodia, Phomopsis, Phyllosticta, Sphaeropsis
Quince, flowering	Cercospora, Faraea, Gymnosporangium, Septobasidium
Red cedar, western (Thuja)	Keithia (or Didymascella)
Red Tip	See Photinia
Redwood, Sequoia	Botrytis, Cercospora, Mycosphaerella, Pestalotia, Phomopsis
Rhododendron	Alternaria, Cercospora, Coryneum, Gloeosporium, Glomerella, Guignardia, Lophodermium, Mycosphaerella, Pestalotia, Phomopsis, Rhizoctonia, Septoria, Venturia

PLANT	PATHOGEN CONTROLLED
Rose	Alternaria, Bipolaris, Botryosphaeria, Botrytis, Cercospora, Cladosporium, Cythodrocladium, Diplocarpon, Elsinoe, Gloeosporium, Helminthosporium, Leptosphaeria, Monochaetia, Mycosphaerella, Peronospora, Phyllosticta, Septoria
Rosemary	Rhizoctonia
Russian Olive	Cercospora, Colletotrichum
Sage	Cercospora, Peronospora, Puccinia, Ramularia, Rhizoctonia
Salvia	Cercospora, Puccinia
Santolina	Botrytis
Senecio	Cercospora, Gloeosporium, Phyllosticta, Puccinia, Ramularia, Septoria
Schefflera	Alternaria
Snakeplant	Fusarium, Gloeosporium
Snappedragon	Alternaria, Bipolaris, Botrytis, Cercospora, Colletotrichum, Drechslera, Fusarium, Helminthosporium, Peronospora, Phyllosticta, Puccinia, Rhizoctonia
Spathiphyllum	Alternaria
Spindletree	See Euonymus
Spirea	Cylindrosporium
Spruce	Ascochyta, Botrytis, Cladosporium, Lophodermium, Rhizoctonia
Spurge	Cercospora, Melampsora, Puccinia
Statice	Alternaria, Ascochyta, Botrytis, Cercospora, Colletotrichum, Rhizoctonia, Uromyces
Strawflower	Fusarium
Sumac	Cercospora, Cladosporium, Fusarium, Phyllosticta, Septoria, Taphrina
Sunflower, Ornamental	Alternaria, Puccinia
Syngonium	Cephalosporium, Erwinia, Fusarium
Tulip	Botrytis
Venus flytrap	Colletotrichum
Verbena	Alternaria, Ascochyta, Botrytis, Cercospora, Phyllosticta, Septoria, Puccinia, Rhizoctonia, Septoria, Stemphylium
Viburnum	Botrytis, Phomopsis, Cercospora, Helminthosporium, Monochaetia, Ramularia, Cladosporium
Walnut	Cercospora, Cladosporium, Cythodrocladium, Cylindrosporium, Gnomonia
Willow	Ascochyta, Cercospora, Ciborinia, Cylindrosporium, Fusicladium, Gloeosporium, Marssonina, Melampsora, Phomopsis, Phyllosticta, Ramularia, Rhytisma, Septoria, Taphrina, Venturia
Wisteria	Alternaria, Cercospora, Colletotrichum, Gloeosporium, Pestalotia
Yucca	Cercospora, Cylindrosporium, Gloeosporium, Puccinia
Zinnia	Alternaria, Botrytis, Cercospora, Rhizoctonia

\*Do not exceed 0.75 pound per 100 gallons on flower spikes.

\*\*Do not exceed 1.5 pounds per 100 gallons.

This product is not recommended for the treatment of marigolds due to highly variable plant responses.

### GRASSES: TURF USES (NON-AGRICULTURAL USES)

Applications restricted to lawn grasses by professional applicators. Not for homeowner use. Follow provisions within the Non-Agricultural Use Requirements Box.

CROP	DISEASE/ PEST	APPLICATION RATE	APPLICATION TIMING INTERVAL	LIVESTOCK GRAZING/ FEEDING	COMMENTS
Lawn Grasses	Algae	6 ozs. in 3 to 5 gals./1000 sq. ft.; 16 lbs. in 130-220 gals./acre	Begin when algae begins to appear. Repeat at 7-day intervals as long as condition persists.	Do not graze treated areas or feed clippings to livestock.	Do not use on grasses grown for seed.  Do not use on grasses intended for grazing, such as range or pasture grasses.
	Copper Spot ( <i>Gloeocercospora sorghi</i> )	4-8 ozs. in 3 to 5 gals./1000 sq. ft.; 11-22 lbs. in 130-220 gals/acre	Begin application when disease appears. Repeat at 7-day intervals as long as condition persists.		When conditions are unusually favorable for disease, use 6 to 8 ounces per 1000 square feet (16 to 22 pounds per acre) and reduce intervals to 3 to 5 days.
	Fusarium Blight ( <i>Fusarium</i> spp.)	4-8 ozs. in 3 to 5 gals./1000 sq. ft.; 11-22 lbs. in 130-220 gals/acre			
	Gray Leaf Spot ( <i>Pyricularia grisea</i> )	8 ozs. in 3 to 5 gals./1000 sq. ft.; 22 lbs. in 130-220 gals/acre			
Golf Courses Professional application to industrial (office park), municipal and residential lawns	Red Thread ( <i>Laetisaria fuciformis</i> )	4-8 ozs. in 3 to 5 gals./1000 sq. ft.; 11-22 lbs. in 130-220 gals/acre			
	Slime Mold ( <i>Mucilago, Physarum Fuligo</i> )	4-8 ozs. in 3 to 5 gals./1000 sq. ft.; 11-22 lbs. in 130-220 gals/acre			

CROP	DISEASE/ PEST	APPLICATION RATE	TIMING INTERVAL	APPLICATION GRAZING/ FEEDING	LIVESTOCK COMMENTS
Lawn Grasses (Cont'd.)	Dollar Spot ( <i>Sclerotinia homiocarpa</i> )	6-8 ozs. in 3 to 5 gals./1000 sq. ft.; 16-22 lbs. in 130- 220 gals/acre			
	Pythium Blight ( <i>Pythium</i> sp.)	8 ozs. in 3 to 5 gals./1000 sq. ft.; 22 lbs. in 130- 220 gals/acre	Repeat at 5-day intervals, or more frequently if conditions are favorable for disease development.		
	Fusarium Snow Mold	6-8 ozs. in 3 to 5 gals./1000 sq. ft.; 16-22 lbs. in 130- 220 gals/acre	Apply at 2 to 6 week intervals during winter.		
	Leaf Spot ( <i>Helminthosporium</i> spp.), <i>Rhizoctonia</i> Solani, Brown Patch	4 ozs. in 3 to 5 gals./1000 sq. ft.; 11 lbs. in 130- 220 gals./acre	Begin when disease appears. Repeat at 7-day intervals as long as condition persists.		
	Leaf Rust, Stem Rust, Stripe Rust	4 ozs. in 3 to 5 gals./1,000 sq. ft.; 11 lbs. in 130- 220 gals/acre	Begin when disease threatens. Repeat at 7 to 10 day intervals as long as disease persists.		

### CHRISTMAS TREES: PLANTATIONS AND NURSERIES

Aerial application: Apply 1 to 2 pounds per acre using a minimum rate of 10 gallons of spray per acre during aerial application.  
Application of dilute sprays: Apply as thorough coverage spray using 1 to 2 pounds per acre or 1 to 2 pounds per 100 gallons of water. Begin application at first sign of disease and repeat every 7 to 10 days. Use the shortest spray interval during periods of frequent rain, when severe disease conditions persist or during periods of rapid plant growth. This product may be used alone or in combination with other fungicides.

USE SITE	DISEASES CONTROLLED	APPLICATION RATE (LB/AC OR LB/100 GAL)
Christmas trees, including fir, spruce, pine	Ascochyta, Alterneria, Botrytis, Cephalosporium, Cladosporium, Cronartium, Fusarium, Lophodermium, Melampsora, Monchaetia, Phomopsis, Rhizoctonia, Septoria, Sirococcus, Sphaeropsis	1 to 2 pounds per acre or 1 to 2 pounds per 100 gallons make applications at 7 to 10 day intervals

**ATTENTION:** This product contains mancozeb and ETU, chemicals known to the State of California to cause cancer in laboratory animals. ETU is also known to the State of California to cause birth defects or other reproductive harm in laboratory animals.

### WARRANTY STATEMENT

GRIFFIN warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials or the manner of use or application, all of which are beyond the control of GRIFFIN. In no case shall GRIFFIN be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product or at GRIFFIN'S election, the replacement of this product. GRIFFIN MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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Pentathlon is a registered trademark of Griffin Corporation.

VENDOR PREFERENCE CERTIFICATE

Certification and application\* is hereby made for Preference in accordance with West Virginia Code, §5A-3-37. (Does not apply to construction contracts). West Virginia Code, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the West Virginia Code. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

- 1. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% resident vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: \_\_\_\_\_ Signed: \_\_\_\_\_

Date: \_\_\_\_\_ Title: \_\_\_\_\_

\*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

**West Virginia Code §5A-3-10a states:** No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

**DEFINITIONS:**

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

**EXCEPTION:** The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (**West Virginia Code §61-5-3**), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

**WITNESS THE FOLLOWING SIGNATURE**

Vendor's Name: ADVANCED TURF SOLUTIONS, INC.

Authorized Signature: *Dan J. Dunlap* Date: September 1, 2010  
*V.P. Operations*

State of INDIANA

County of HAMILTON, to-wit:

Taken, subscribed, and sworn to before me this 1st day of SEPTEMBER, 2010.

My Commission expires JANUARY 29, 2016.

AFFIX SEAL HERE

NOTARY PUBLIC *Susan A. Logan*  
SUSAN A. LOGAN